AN ISTANBUL PERSPECTIVE ON BRIDGING DIVIDES FOR WATER

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PREFACE

After months of meticulous and in-depth analysis of the Forum deliberations, we proudly present you the latest publication of the 5th World Water Forum, An Istanbul Perspective on Bridging the Divides for Water. This book is a collection of eight individual chapters that provide a cross-cutting analysis of the most prominent subjects addressed during the Forum. The compilation of this book was realized through careful studies on Forum outcome documents and video recordings of Forum sessions to grasp a better understanding of the discussions and key recommendations related to each chapter. Surely, there is more to the Forum than the speeches and presentations and the chats in the lobbies comprise an essential part of the Forum's content; however, these could not be recorded. This book is therefore, shaped solely by recorded and written material.

The great success of the 5th World Water Forum made a remarkable impact across the global water community and reaffirmed Turkey's pivotal role amongst the greatest nations of water. Although the outcomes of the Forum may fail to satisfy those looking for more concrete solutions, the Forum strived to bridge the divides as promised through facilitating open and all-inclusive dialogues. Most important of all, the political outcome documents of the Forum are of great value for the international water agenda as they will provide guidance to shape the global water strategies and actions through the coming months and years. The Istanbul Ministerial Statement and the accompanying Istanbul Water Guide, which include critical recommendations and commitments on global water issues, successfully reflect the Forum's thematic outcomes and are excellent roadmaps for the political processes of future Fora. Additionally, through the efforts of the Turkish Ministry of Foreign Affairs, the Istanbul Ministerial Statement and the Istanbul Water Guide have been circulated as a UN General Assembly document (A/63/852) and a similar process is suggested for the coming World Water Fora.

We believe this book will be an invaluable reference for future generations to comprehend the major concerns and sensitivities of today's water sector. We hope that it will also shed light for the way forward and stimulate political mobilization for finding sustainable solutions.

Prof. Dr. Oktay Tabasaran
5th World Water Forum
Secretary General

Prof. Dr. Ahmet M. Saatçi
5th World Water Forum
Vice Secretary General

NOTE FROM THE EDITOR

The 5th World Water Forum was magnificent.

For those of us Istanbul natives who spent many years away from home, participating in a week-long event on Haliç – the Golden Horn - was a gift, as well as, a reminder of what we had missed. For those who had toiled for two years to make this Forum happen, it seemed like a miracle. The venue was impeccable, logistics was faultless, the programme was on schedule. 30,000 people were hosted without a problem.

The World Water Fora are initiated by the World Water Council every three years in cooperation with the government of the host country. A Secretariat established by the host country is intended to serve as the local organizer. In the aftermath of the event, the Council and the Secretariat cooperate once more to disseminate the results of the Forum. The Final Report and the Global Framework for Action are such publications of the 5th World Water Forum. Evaluation of the long-term impact is done separately.

The Secretariat embarked on a merciless effort in the weeks following the Forum. The staff screened audio visual records of all thematic and regional sessions and prepared detailed reports which were then presented in Secretariat discussion meetings. As a result of this effort, the staff who had been heavily involved in the organization of the Forum, acquired a level of competency in terms of Forum topics.

This book started out as a simple means for sharing the Secretariat's observations on the Forum deliberations with a larger audience. It is unique in the sense that these are the observations of the people who have made the Forum come together. The editor was the only person who was not involved in the Forum's preparations. Her observations are that of a participant who had access to information in the Secretariat archives, including the Analysis Report, a detailed organizational analysis of the Forum.

The young and energetic staff of the Secretariat was a driving force in the preparation of the Forum. Unlike many seasoned experts, their insight into the water crisis has not been clouded with disappointment and disillusionment, and their vision is clear. It is the goal of this book to capture the actual deliberations and audience input through their perspective. Consequently; even though, none of

the authors are native speakers of English, it was an editorial decision not to interfere with the final texts they prepared, except for basic proofreading.

Authors aimed to reflect the Forum only – without personal judgment - and have tried to remain as objective as humanly possible.

When the idea of synthesizing what we had learned during the discussion meetings first came about, general reaction from many outside the Secretariat was "these kids can't do it". We are therefore grateful for the constant support of Profs. Oktay Tabasaran and Ahmet Mete Saatçi, the Secretary General and the Vice Secretary General of the 5th World Water Forum, who never gave up on this project.

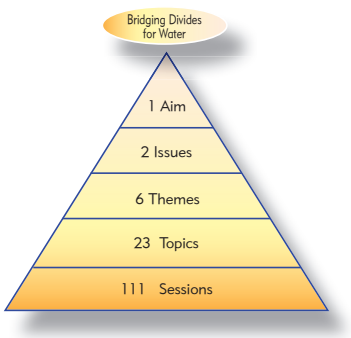
Ipek Erzi, Ph. D.
5th World Water Forum
June 2010

METHODOLOGY

The World Water Forum, with its many components and large number of participants, requires a structure for efficiency, the preparation of which takes two years. However, a Forum is also a public meeting for open discussion. Therefore, in terms of content, what happens during the Forum week is not always what has been planned in the previous two years. This report aims to capture some of the actual deliberations and the audience input during the Forum week rather than repeating planned speeches, presentations and readily available information.

Thematic and Regional Processes

Following the Forum week, the 5th World Water Forum Secretariat staff screened audio visual records of the Thematic and Regional Processes, High Level Panels, and special events. Detailed reports of the Thematic Process sessions were prepared. These reports included information on invited speakers, panelists, audience interventions, main issues discussed, outcomes and recommendations. "Discussion meetings" were held for each of the six Forum Themes. These discussion meetings were planned taking into consideration the three-layer structure of the Thematic Process. First, each session of a Thematic Topic was presented but not discussed by its rapporteur. Second, sessions under each Thematic Topic were discussed and evaluated with the discussion group which gave an overview of the Topics that made up the Theme. Third, special focus events related to the Theme were presented and discussed. Finally, presentation of the Thematic wrap-up session was followed by an overall discussion of the Theme including but not limited to pros and cons of the specific Thematic Area structure, content planning, logistics and conveners. The performance criteria were background and diversity of the invited speakers and panelists, audience attendance and participation, interaction between the presenters and the audience, and last but not least the content.



Session distribution to the rapporteurs were planned by the Secretariat Thematic Coordinator. Whenever possible, session rapporteurs were selected from those individuals who had worked for the related Theme or Topic during the Forum preparation. Reports of sessions with missing or damaged records were completed using transcripts. Political and Regional Process coordinators have attended

all "discussion meetings" and although they have not taken part in the discussions, they have provided input when necessary.

A similar procedure was followed for the Regional Process, except due to its single-layer structure, there were seven rapporteurs for seven regions. "Discussion meetings" on regional sessions were held using the Secretariat reports, as well as, the Regional Documents prepared by the regional committees before the Forum for on-site distribution. Transcripts were also extensively used. Regional session reporting was organized by the Secretariat Regional Coordinator.

Africa
Americas
Arab and MENA
Asia-Pacific
Europe
In and Around Turkey
Mediterranean

Assessment of high-level panels were held separately. Evaluation criteria for highlevel panels included commitments announced by the representatives from international organizations, as well as, high level national representatives. Although, interaction between the panelists and the audience should have been a criterion, due to time limitation, not all panels had been conducted accordingly.

Water and Disaster
Financing for Water
Water, Food and Energy
Sanitation
Adaptation to Climate Change

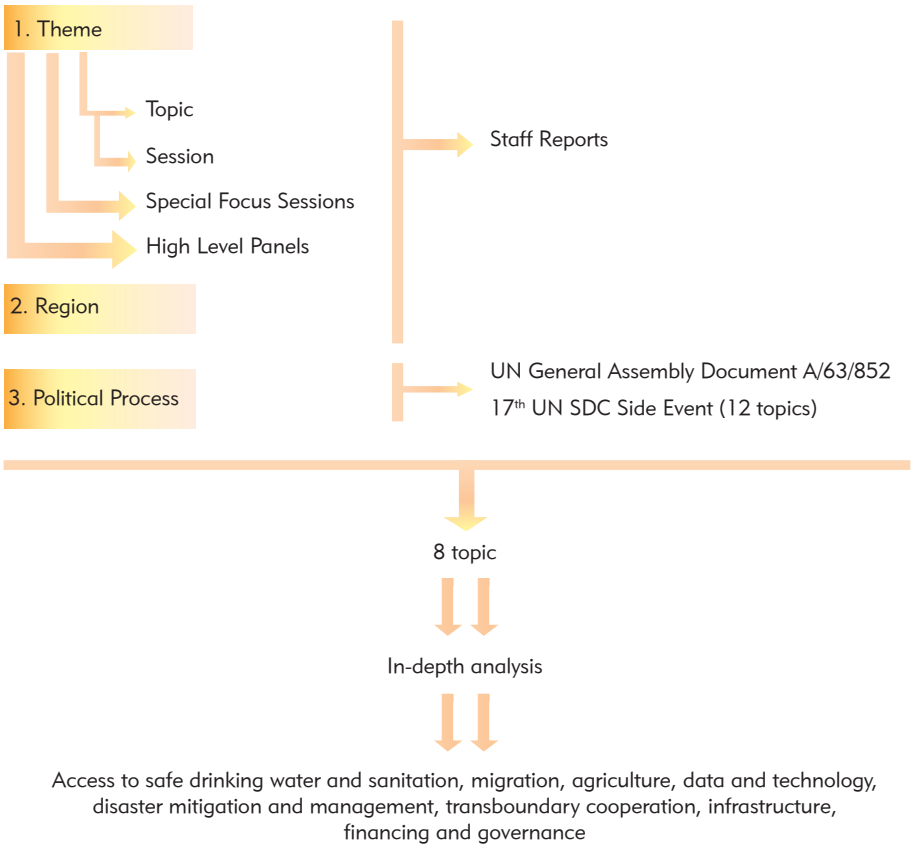
The Political Process produced four negotiated documents: Declaration of Heads of States, Ministerial Declaration and the Istanbul Water Guide, Parliaments for Water, the Istanbul Water Consensus. Reports from the Ministerial Roundtables were also published after the Forum along with these four negotiated documents. Istanbul Ministerial Declaration and the accompanying Istanbul Water Guide became UN General Assembly Document A/63/852 on May 12, 2009. The outcomes of the Forum Political Process were also presented during the 17th session of the UN Sustainable Development Commission in a side event "5th World Water Forum – Water Management Adaptation Strategies to the Global Changes" organized by the Turkish Ministry of Foreign Affairs in cooperation with the World Water Council and the UNESCO World Development Programme. The presentation of the Turkish Ministry of Foreign Affairs included political messages from the Forum, arranged under 12 headings:

1. Adaptation to Global Changes
2. Access to Safe Drinking Water and Sanitation, and Achieving MDGs
3. Water for Agriculture
4. Water and the Environment
5. Water and Disaster
6. Water and Infrastructure
7. Financing Water Sector
8. Good Governance in Water Sector
9. Thinking Outside the Water-box
10. Transboundary Cooperation
11. Data and Information
12. Technology and Education

Synthesis

Points of discussion noted in the Secretariat "discussion meetings" for the Thematic Process were cross-referenced with priorities and commitments presented in the Regional Process. Then, the 12 headings of the Political Process were used as a guide to assess whether Thematic and Regional priorities had political support. The outcome showed that not all subjects had been given equal diligence in all three processes. As a results, eight topics were identified in order to be all-inclusive but also staying true to the initial goal of the synthesis report. Related items from each of the four political outcome documents, as well as, the roundtable reports were categorized according to these chapters by the Secretariat Political Process Coordinator to help with the writing.

Authors were selected from the Secretariat staff based on their background, command of written English and analytical competence presented during the "discussion meetings".



In-depth analysis of the selected topics were conducted by the authors, the rapporteurs and the three Process coordinators in brainstorming sessions. As the writing progressed, some changes had to be made to the initial synthesis structure in light of these sessions. Most importantly, adaptation to global changes proved to be a huge and overarching topic, impossible to fit in a single chapter. A focal point had to be identified. Migration, a topic included in the World Water Fora for the first time, was selected. Other issues related to adaptation to global changes, as well as, subjects such as education, capacity building and thinking outside the water-box had been inherent to all Forum deliberations and had been duly addressed under various topics. This was exactly reflected in the synthesis.

The references used in this book are the session reports prepared by the Secretariat staff, transcripts, presentations, regional reports, political process outcome documents, publications launched and/or widely addressed during the Forum. The staff reports and the transcripts are archived in the Secretariat library. Regional Documents, as well as, Political Process outcome documents can be accessed on www.5thworldwaterforum.org . Publications launched during the Forum are available on the websites of related organizations.

ACCESS TO SAFE DRINKING WATER AND SANITATION

Özlem ASLAN

Access to safe drinking water and sanitation is a basic human need. In the context of rapid population growth, economic instability, unstable food and energy prices and climate change, more than a billion people in the developing world lack access to safe drinking water, while nearly three billion people live without access to adequate sanitation systems (UNICEF, 2007). The international community committed to the Millennium Development Goals (MDGs) which aims to halve the proportion of people without access to safe drinking water by 2015. The 2002 Johannesburg World Summit for Sustainable Development was the platform where a similar target was set for access to improved sanitation. OECD countries are also committed to working with developing countries to achieve this target.

As a result of these commitments, 1.6 billion people have gained access to a safe water source since 1990 according to the 2008 UN Millennium Development Goals Report (UN Report) (UN DESA, 2008). It is indicated in this report that the proportion of people in developing countries with access to safe drinking water is estimated to have improved from 30 percent in 1970 to 71 percent in 1990, 79 percent in 2000 and 84 percent in 2004. This trend is projected to continue. The UN Report indicates that in 2025, water shortages will become more widespread particularly within poorer countries like those in the Middle East, Africa, and parts of Asia. It is also indicated that by 2025, large urban and peri-urban areas will necessitate new infrastructure to guarantee safe drinking water and adequate sanitation.

"Access to Safe Drinking Water and Sanitation" In the 5th World Water Forum

It is within the above context that the subject of access to safe drinking water and sanitation was given a prominent place in the 5th World Water Forum programme. Access to safe drinking water and sanitation is discussed within the terms of right to water and sanitation (RTWS) in all the processes of the Forum.

However, the way it was discussed acquired a different character in the Thematic Process than that in the Political Process. The Political Process discussions were focused on the existence of such a right and the implications of its recognition. The Ministers chose to wait for the UN Independent Expert's report about the implications of RTWS implementation rather than including it in the Ministerial Statement. On the other hand, in the Thematic Process, it was generally taken for granted that RTWS would be recognized as a human right and the discussions evolved around its implementation.

History of the Discussion of Right to Water and Sanitation

The discussion of whether water is a human right or not has been continuing since the 1990s. In 1992, the Dublin Conference on "Water and Development" and the Rio Summit on "Environment and Development" recognized *inter alia,* the basic right of all human beings to have access to clean water and sanitation and acknowledged this right as a "commonly agreed premise" (UNCED, 2003). Shortly thereafter, in the 1993 World Conference on Human Rights held in Vienna, Austria, the linkage between poverty and water shortage was pointed out clearly claiming that poverty is widespread mostly in water-short areas. In 2002 the UN Committee on Economic, Social and Cultural Rights formally recognized the "right to water" as a human right: "Water is a limited natural resource and a public good fundamental for life and health. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights. […] The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses" (UN CESCR, 2002).

Political Process

Access to safe drinking water and sanitation was on the agenda of the three concurrent processes of the Forum. It was one of the key issues discussed in the Political Process of the 5th World Water Forum and it has been on the Forum's agenda starting with the inception of the preparatory meetings.

There was a tough and long debate on the issue of right to water during the negotiation process of the Ministerial Statement. Most of the delegations did not wish to make any reference to the right to water in the Statement. Instead, they preferred to take up this issue following the conclusion of the process and deliberations carried out at the UN Human Right Commission in Geneva. Although there was some reluctance to include the right to water and sanitation in the Ministerial Statement, both Istanbul Water Guide and Istanbul Water Consensus made reference to the RTWS. On the political front, mayors, parliamentarians, and ministers made commitments to put water higher up on their political and action agendas. Through the Istanbul Water Consensus, more than 50 cities committed to spearheading the improvement of access to water, sanitation and sustainable use of resources and to adapting water infrastructure and services to emerging challenges such as climate change, rapid urban growth and pollution of water resources.

It was generally accepted that implementation of RTWS is crucial for development of MDGs not only regarding access to water and sanitation but also regarding the living conditions, poverty reduction and health, education and gender issues. It was recommended to refer at least to the General Comment No. 15 of the UN Committee on Economic, Social and Cultural Rights (UN CESCR, 2002) which is the UN reference and generally agreed definition for right to water and sanitation. It was noted that the UN Commission on Human Rights is currently analyzing the legal implications of declaring RTWS as a human right and not merely as a socio-economic right. Many countries find it advisable to wait for the outcomes of the UN Independent Expert report before moving forward. Countries which have already included RTWS into their national legislation called upon all other countries to implement it at the national and local levels without much delay. As a result, the Ministerial Declaration acknowledged the discussions within the UN system regarding access to safe drinking water and sanitation and recognized access to safe drinking water and sanitation as a basic human need[1].

Another part of Political Process was the Parliamentarians' Process. Different from the Ministerial Process, the parliamentarians declared that RTWS should be recognized as a human right. Parliamentarians called not only to develop legislation that would recognize right to water and sanitation as a human right but also to develop legal mechanisms to facilitate the implementation of right to water and sanitation. Understandably, such declarations are harder to ensue from the ministers as these decisions point to the tendencies and actions of both their current and future governments. Those responsible for policy implementation need to take into consideration every implication of recognizing RTWS as a right before implementing it; whereas, policy makers who are not responsible for implementation can enjoy a wider degree of freedom in their deliberations.

The Ministerial Roundtable titled "Sanitation: Keeping the Momentum after the International Year of Sanitation; Can Right to Water and Sanitation Help?" included an evaluation of the International Year of Sanitation (IYS) and the deliberations on the implementation of the RTWS. It was widely accepted by the attendees that participation of high level political representatives in the discussions was an indication of the increasing attention RTWS has been receiving since the 4th World Water Forum in Mexico. It was noted that IYS succeeded in raising awareness and increasing the recognition of sanitation. It was strongly emphasized that investing in sanitation has both social and economical benefits. Sanitation is also a point of concern as it is lagging severely on its way to meeting the MDGs. The recognition of right to sanitation could help speed up the implementation of MDG 7 (ensure environmental sustainability), specifically the target on access to safe drinking water and sanitation. RTWS would be a significant tool to reach the MDGs, as it was also indicated in the Thematic Process.

1 20 countries mainly from Africa and Latin America challenged the Ministerial Statement's definition of water as a "human need" and signed a counter declaration. "We recognize that access to water and sanitation is a human right and we are committed to all necessary actions for the progressive implementation of this right" A further dissenting statement says "We call on States to develop a global water forum within the framework of the United Nations, based on the principles of democracy, full participation, equity, transparency and social inclusion."

The need to scale up innovative pro-poor approaches was stressed during the Roundtable Meetings in the Political Process. The problems with water and its use pervade the lives of the poor. The link between poverty and the interlinked issues of health, food security, and environmental integrity are well understood and widely documented. There is a consensus that poverty and water are inextricably linked in many parts of the world. The details of this connection vary greatly, but the impact of water on the lives and prospects of the poor is clear (Asian Development Bank, 2004). Improved access to water and sanitation is very central to the reduction of hunger and poverty. However, rather than focusing on how, where and with whom to develop a pro-poor approach practically, the content of roundtable discussion did not go beyond voicing universal sentiments like the necessity of pro-poor approach (World Water Council; 5th World Water Forum Secretariat; Turkish Ministry of Foreign Affairs, 2009).

The importance of strong national policies and financing plans for sanitation was also highlighted during the meetings of the Political Process. Yet, the implementation of the Human Right to Water and the fulfillment of internationally agreed targets aiming at the improvement of drinking water and sanitation infrastructures require considerable financial funds. With a growing world population and the already existing lack of access to water and sanitation services for everyone on one hand and ever shrinking public budgets on the other, there is need for alternative solutions in how to secure the required investment. The will to mobilize additional resources for sanitation was declared and government representatives included the exploration of means to increase accountability during processes linked to sanitation on their agenda. Another issue which was agreed upon was the exploration of potential of cooperation agreements between public and private sectors, as well as within public and private sectors themselves.

The Political Process discussions also included the incorporation of a gender perspective in RTWS policies, reflecting the different needs of women and men. The results of these discussions on the implementation of a gendered perspective regarding the water and sanitation policies are indicated in the Istanbul Water Guide, Istanbul Water Consensus, and proposals emerging from "Parliaments for Water" (World Water Council; 5th World Water Forum Secretariat; Turkish Ministry of Foreign Affairs, 2009). The significance of gendered perspective regarding the water and sanitation policies was first emphasized on a global scale during the 1977 United Nations Water Conference at Mar del Plata which set up the International Drinking Water and Sanitation Decade (IDWSD-1981-90). The decade included country specific studies which were intended to document the hardships of women and to design activities to alleviate their burdens. The 1992 International Conference on Water and the Environment in Dublin recognized the central role of women in the provision, management and safeguarding of water. According to Gender, Water and Sanitation Report of UN WATER, providing water is accepted as a task of women. In that sense, accessible clean water is significant for women in a particular way as they will be able to save time for themselves rather than spending hours for getting water. In the long run this will mean more educated and working women which will also improve the economic conditions in the region. Access to safe drinking water and sanitation through

safe tools is also necessary to eliminate the risks to women and girls of sexual harassment/assault while gathering water. It is also indicated in the report that access to water and sanitation results in higher rates of child survival which as a result lowers fertility rates. With less children, women's labor in household decreases and their opportunity to exploit their capacities increases. Community-based organizations for water management can improve social capital of women by giving them leadership and networking opportunities and building solidarity among them. There are close interlinkages between gender equality and women's empowerment and access to safe drinking water and sanitation. Consequently, reaching MDG 3 (Promote Gender Equality and Empower Women) and MDG 7 are closely interconnected (Inter-agency Task Force on Gender and Water, 2006).

Thematic Process

The outcomes of the political and thematic discussions show that a critical gap existed between the two processes of the Forum regarding the RTWS. Through a series of four preparatory meetings, to which all governments were invited, the Istanbul Guide and the Ministerial Statement were prepared. To do so, the coordinators of the Forum's themes were invited to all of the preparatory committee meetings and given a voice in the discussions. In this way, a close link was established between the Ministerial Process and the Thematic Process deliberations. Although these two processes progressed simultaneously, their stances towards RTWS were very different in terms of the stage of discussion. The Thematic Process was already on the stage of discussing the implementation of RTWS with the assumption that the RTWS would be recognized as a human right in the Political Process; whereas, within the Political Process either ministers or parliamentarians were discussing the existence of RTWS. This gap can also be read from the reactions of the representatives of the Thematic Process towards the final version of the ministerial statement. Virginia Roaf's speech in the thematic wrap-up of Theme 4 was a significant indicator of the shock and disappointment of the participants of the Thematic Process in that sense.

"RTWS was already energetically discussed and debated in other parts of the Forum including within the CEO Water Mandate and I believe within parliamentarian session. We are therefore very disappointed that the right to water and sanitation has not been recognized within the Ministerial Declaration although earlier draft before the final draft was agreed have included right to water and sanitation. So we would like as our opening statement relating to our session to reaffirm the recognition of the right to water and sanitation. We are pleased to have evidence and to be continuing to work towards its implementation."
Virginia Roaf, Theme 4 Thematic Wrap-up Session

It was the first time in the history of the 5th World Water Forum that a whole topic was dedicated to Right to Water and Sanitation. Topic 4.1 "Implementing the Right to Water and Sanitation (RTWS) for Improved Access" did not discuss the existence of right to water, but took it as a fundamental human right which must be supported by the international law, declarations and state practice. Topic 4.1 also took RTWS as a major tool for water community to address problems with the development processes in the 20th century. On the civil society and academic side, the discussions about the existence of RTWS had already been finished and had moved on to implementation. The terrible effects of lack of sanitation, which is closely linked to water, were mentioned again and it was claimed that the cost of lack of sanitation is more than the cost of the provision of necessary services for sanitation. It was highly emphasized that there is an urgent need for an attitude change, which can be achieved through access to information and capacity building for civil society, governments and vulnerable and marginalized groups.

Another point that was highly emphasized was the need for clarifying the scope, content and state obligations related to right to sanitation. The significance of transparency and accountability regarding the management of water and sanitation services was another point emphasized during the Forum.

At the end of the Thematic sessions regarding the access to water and sanitation, Freshwater Action Network (FAN) and Centre on Housing Rights and Evictions (COHRE) declared that they were going to follow up with a publication on best practices of the use of RTWS. It was promised that all organizations working together with the UN Independent Expert under her mandate will continue to improve and update the Right to Water and Sanitation website as a useful tool for all stakeholders interested in the issue. COHRE declared that it will continue to work with governments and other stakeholders, including UN bodies such as the Human Rights Council, to increase understanding and implementation of the right to water and sanitation.

Alongside the Political and the Thematic Processes, access to water and sanitation was also on the agenda of the Regional Process. The key messages from the African Regional Paper, which were presented and discussed during the African Regional Session, focused on the in-country and regional level actions to achieve the MDGs and the longer term Africa Water Vision 2025.

African Regional Process made it visible that meeting the MDGs would require extra annual worldwide investment which is very hard to find in the current condition of economic crisis. These investment requirements regard solely the cost of expanding coverage by water supply and sanitation services. They do not reflect the costs of operation, maintenance and renewal. This is a problem as the lack of funds for these activities results in deteriorating services and additional investment requirements at a later stage, as infrastructure wears out due to lack of maintenance.

- There is a clear vision for achieving water security in Africa, and commitments at the Africa's highest political level are in place;
- A major scaling up of finance for expansion of Africa's water infrastructure (up to US50 billion per annum with a gap estimate of US$30 billion per annum) is needed and this must begin soon in ways that deliver economic growth;
- A lot is known about financing of drinking water and sanitation but there is a need to extend knowledge to other water-related sectors, notably agriculture and energy;
- A comprehensive integrated approached should be pursued on infrastructure development to optimise multi-purpose use with country and regional specificities acknowledged;
- There is a need for strong cooperation on transboundary water resources development as an opportunity for cementing regional integration.

African Regional Document (AMCOW, African Development Bank Group, 2009)

At the current rate, the world will miss the MDG sanitation target by over 700 million people; southern Asia and Sub-Saharan Africa are especially off track.
OECD Report on Managing Water for All (OECD, 2009)

In the European Regional Process sanitation was the key issue. The document "Water for a Sustainable Europe - Our Vision for 2030" starts with the statement: *"We have achieved sustainable water resource management and universal access to modern and safe water supply and sanitation because we value water in all its dimensions – in its economic, social, environmental and cultural importance"*[2]. In the European Process, the problem of old systems was underlined. It is therefore necessary to consider the full set of financial implications of extending first-time access, particularly to networked services.

The European Regional Document declares that the people in Europe have universal access to safe, modern and affordable water and sanitation services. Europe is able to satisfy other human water needs such as for business, industry, agriculture and recreation. The countries that have contributed to the preparation of the Regional Paper pledge to ensure access to safe drinking water and sanitation services to their citizens.

Conclusion

Access to safe drinking water and sanitation is at the moment an indispensable aspect of the discussion on water crisis throughout the world. However, regarding the Ministerial Process, it can be argued that a detailed discussion of the impacts of implementation of RTWS is needed. The Ministerial Process of the Forum recognized access to safe drinking water and sanitation as a basic human need. However, there is still a wide range of principle positions about this right and the debate is far from being over especially since the issue has been brought to the recently created UN Committee of Human Rights. It seems that the final decision of the UN Commission on Human Rights on RTWS is crucial for all states to take further steps regarding this issue.

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2 The present text was developed in an inclusive process by European stakeholders initiated by the European Water Partnership (EWP) and is supposed to be the starting point for a wide consulation process in the different European Regions.

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AGRICULTURE

M. Özgür BOZÇAĞA

Agriculture was neither a Theme nor a Topic in the 5th World Water Forum yet it came cropping up in various sessions. Notwithstanding the fact that agriculture utilises 70% of the global water use and the many linkages agriculture has with various subjects regarding water management, the Forum had one topic and one joint session[1] directly related with "food" in the Thematic Process. The margins of discussion on agriculture were narrowly squeezed into the theme related to attaining the MDGs and ending poverty and hunger, Theme 2 "Advancing Human Development and the MDGs". As iterated by the Synthesis Report of Topic 2.3 "Water and Food for Ending Poverty and Hunger", "Comprehensiveness was banned at WWF5. [...] Organizers wanted [...] more a validated set of focus." (ICID, 2009). In other words, grave problems in today's agriculture which surfaced through the 2008 food crisis were not reflected on the Forum process through neglecting agriculture.

Even though there may be various items to list (from the capitalization of agricultural production to the biofuel production in the US or in the EU), the quest for finding the real causes of the food crisis, includes and intersects many of the issues that are raised in this book. Effects of climate change on the agriculture production, migration of rural populations to other rural areas or directly to urban slums, the infrastructural investment needed for effective use of agricultural inputs and the need of financial instruments in order to conduct these infrastructural investments are some of the issues that are directly linked with agriculture that was discussed in the Forum and reflected in this book.

Agriculture and Migration

In terms of water use in agriculture, migration stands both as a symptom and a cause of water stress. There is a rapid and irreversible trend of flow from the

[1] 2.3/5.2 Joint Session: Drops and Crops: Water Demand Management in Agriculture

rural to urban and the pace of urbanisation is unprecedented in today's world. In this regard, migration stands as a symptom of high use of water in agricultural production because of the change in dietary choices from more vegetable dominated to more meat oriented, in other words, from less water demanding products to more water demanding. This trend of "meatification" is one of the biggest contributors to the increase of agricultural water use. At the same time, migration causes agricultural water stress, through obtaining most of the share of the infrastructural budget from the national public budgets. In the current highly urbanised world, more financial resources are used for satisfying the demands of the urban populations and rural populations and agriculture is regarded as second class. Thus, infrastructural investments on effective and efficient use of water, which can alleviate hunger and poverty substantially in many parts of the worlds, is usually disregarded in the name of prioritising the urban needs in government policies.

In these conditions, rural exodus is positive if it actually helps those who remain on their farms to develop their production. This is likely to be the case if the migrants are attracted to urban areas where they have alternative job opportunities. It is negative if migrants move to urban areas because they cannot survive anymore or if they are ready to accept the difficulties of slums or shanty towns. A good balance between farmers and poor population migrating to urban areas is therefore a key to development and to food sovereignty.

Synthesis Report of Topic 2.3
"Water and Food for Ending Poverty and Hunger", ICID

Along with migration, the pace of development also result in dietary choices for developing country residents. Increase in the standard of living results in higher calorie intake, preference for more industrially processed food products and inclination for more dairy and meat products. All these contribute to higher water intake of agriculture in the world today and tomorrow. This fact was reflected in the Istanbul Water Guide and Thematic discussions and recommendations were directed towards the policy makers for devising solutions for more effective water consumption in the production of water intensive agricultural crops. Moreover, it is stressed that both local / traditional and modernized techniques of irrigation have to be utilized for more efficient water use while at the same time ecological sustainability and protection of biodiversity must be taken into account. There has to be a delicate balance between modernisation of agriculture for the sake of water efficiency and utilising the traditional agricultural production schemes that has evolved in time for not damaging the sustainability and diversity of the environment.

Local cooperation efforts among the farmers for effective and efficient agricultural water use, can be one of the solutions for local water stress problems. The top down approach need for the inclusion of effective government policies on

Modernization of irrigation in agriculture will contribute to diminish water usage considerably.

Prof. Dr. Veysel Eroğlu, Minister of Environment and Forestry, Turkey

High Level Panel on Adaptation to Climate Change

mainly infrastructural investments and local market arrangements can be complemented by the bottom up approach of water user associations (WUA) in rural areas. However, WUAs' effect can be limited in areas where political social participation is low, gender roles are highly asymmetric and experience in cooperation among farmers are lacking. Consequently, WUAs cannot be regarded as a panacea for numerous problems in all regions of the world and it must be noted that as repeatedly uttered in political and thematic processes, governments have the prime responsibility in both empowering the peasants and including them in the decision making processes.

Strengthen and support water related institutions and associations.

Governments, especially in emerging economies and least developed countries, accelerate the adoption of participatory management of irrigation/drainage infrastructure, the formation of professionally oriented farmer/water user organizations, enhance legal systems and support financially irrigation/drainage administration. Strengthen the transfer and dissemination of irrigation/ drainage technological and management skills from Professional experts in governments and international organizations to the farmers' irrigation/ drainage management organizations;

Istanbul Water Guide, Article 49

The populations of the world who are impoverished and fighting with famine and hunger are also the populations which are growing fastest in the world. The South-east Asian provinces and Sub-Saharan Africa are the two regions in which population growth levels will be the highest in world. In other words, these populations will need more food to sustain their nutrition needs and more water to produce the necessary nutrition input. Consequently, estimates of Food and Agriculture Organisation (FAO) and factsheets of International Fund for Agricultural Development (IFAD) clearly indicate that water intake of agriculture in developing countries will increase by 50% in 15 to 20 years. This means, in near future, in regions where people currently live under high water stress, the situation will worsen in terms of access to water and productive land (and also attaining higher levels of agricultural performance) for farmers will be harder even more. This can in return result in higher dependency of farmers for imported food in these regions and less food sovereignty. Thus, future food crisis of volatile prices in staple products can have an aggrandized effect on the farmers of the third world.

Women in least developed and developing countries face more agricultural labour tasks due to massive migration of men which is expedited by the extreme poverty in rural areas. The gender aspect of access to water was reflected on various session in Theme 1 "Global Changes and Risk Management" (UNEP, 2009)and in the first chapter of this book. The gender aspect in agriculture could

have been in closer scrutiny in Topic 2.3 sessions since there was an urge from the audience to pose questions on the "*feminisation*" of agriculture.

Small holder agriculture and necessary investments for more efficient use of water (rainfed, water harvesting and irrigation) must have a priority in national and international agendas while environmental sustainability is taken into consideration.

Biofuels

The immense increase in energy prices before the food crisis of 2007 – 2008 instigated many developed and developing countries for investing in biofuels in order to protect their national budgets from high oil import bills. Leading European Union (EU) countries, the United States (US) and Brazil became the predominant players in the biofuel market even though they produce biofuels from different crops. Some commentators in the forum regarded biofuels as a way for poor farmers to get out of the poverty loop due to increased demand and relatively assured income. However, starting with FAO reports, many of the criticisms that are raised today on biofuels have found a place in Forum discussions. Apparently, it has been accepted by most of the participants and speakers in the Forum that biofuel production has contributed significantly to the food price volatilities of 2007-2008. The preference shift of producers from food for human/animal nutrition to food for industry/energy and the conversion of food crop pose a serious threat for subsistence farming and reduces the flexibility of farmers in the response to crisis situations.

Conduct national water energy food sustainability assessments.
Not enough is known about how water, energy and food are inter-related and even less about how new trends and climate change will impact the use of both resources. It is important to conduct national water and energy resource sustainability assessments considering agriculture and poverty aspects and through these define sustainable water and energy resources at regional, national and sub-national levels.

Istanbul Water Guide, Article 40

The approach that biofuels can be a way for poverty eradication was rebutted by several speakers and participants of the Forum in Session 2.3.3 "Water for Bioenergy or Food" and 2.3.4 "How can Better Water Management Reduce Poverty and Hunger: A Synthesis". Usually the advocates of biofuel disregard the fact that the biofuel sector is heavily subsidised everywhere in the world and if the sector is not subsidised, it will not be profitable for most of the farmers to produce biofuel crop. The FAO report (FAO, 2008) suggest that US alone provides 11 to 13 billion dollars for the subsidies on biofuels. Apparently, as the governments of the developing and least developed countries support biofuel production through policy measures and financial instruments, the necessary investment in various

aspects of agricultural production for nutrition purposes will be disregarded and it will be even harder to overcome the loop of poverty.

Another criticism addressed in Session 2.3.3 was the low share of biofuels in total energy consumption (US Energy Information Administration, 2009) even though it consumed a significant crop yield in maize, sugarcane and grain production which is described by the recent UNEP Report: Towards sustainable production and the use of resources: assessing biofuels (UNEP, 2009). It has been revealed by the Oxfam report that even if the US uses all its agricultural land and resources for biofuel production, it can only produce 16% of its energy consumption through biofuels. This shows a clear inefficiency not only in industrial/managerial sense but also in terms of poverty eradication and sustainable agricultural production. Biofuels are not produced in arid areas but rather in highly irrigated and intensely water rich spaces of the world like biospheres neighbouring the Amazon forests. The problem emanating from this environmentally and financially inefficient way of producing energy is abashed in Topic 2.3 and the speakers along with the conveners called for more investment mobilisation nationally and internationally on the second generation of biofuels regardless of the demand for biofuels which can be a step towards protecting the right of farmers to access to water and other agricultural inputs.

On the other side of the debate, the biofuel advocates responded to criticisms by answering through the window of climate change and $C0_2$ emission reduction. However, it is not possible to decide whether, the reduction of $C0_2$ emissions with biofuels is significant enough to compensate the energy consumed for the processing and transportation of biofuels. Moreover, the effects of biofuel crop production on ecosystems and especially water is grave. Sustainable farming techniques of crop production for nutrition will demand less water and it can reduce the amount of fertilizers, pesticides and contaminants used in biofuel production. It can also prevent the deforestation of rainforest for expanding the agricultural production area, thus it can provide the necessary means for a more sustainable ecosystem.

Investing in Agriculture

Investing in agricultural infrastructure was discussed in the High Level Finance Panel. Alexander Mueller, Assistant Director General of FAO, started his speech by saying "I'd like to convince you that we have to invest in agriculture". He continued to say that between 1984 and 2004, there was a 58% reduction in agricultural investments and that the ODA fell from 17% to 13% between 1980 and 2000.

In the Ministerial Roundtable on "Water for Food and Poverty Eradication" chaired by Egypt and led by FAO, it was widely accepted by the participants that "there is a shortage of investment directed to agricultural water sector" and moreover "local water use and management techniques are forgotten" and rather affordable "innovative techniques are not sufficiently promoted". In this regard, primarily it

was proposed by the Roundtable participants that while national or international banks and donors mobilize funds for upscaled investment in agricultural water infrastructure, at the same time countries must allocate more resources from the national budgets to agriculture.

The MDG focus of Theme 2 and the specificity of Topic 2.3 on eradicating poverty and hunger through the MDG logic, culminated in issues on agriculture from Topic 2.3 and various issues related with agriculture being discussed under different topics, like migration and infrastructure, rather than under Theme 2. Although the narrow scope of the vision on agriculture and MGDs and "banning comprehensiveness" (ICID, 2009) in the discussion of food – water nexus resulted in the presentation of detailed case studies, it has also resulted in missing several crucial aspects of the current food crisis that the world is facing today.

Another aspect of urbanisation is reflected on the share of water infrastructure investments for rural and urban areas. As more and more people start to live in urban areas and as national economic policies tend to prioritize services or industry sectors which are clustered in urban spaces, the national budgets tend to dedicate lower shares on water infrastructure for rural areas and the agricultural sector.

Food Security – Water Scarcity

The FAO paper on the "State of agriculture in 2030" and "Agriculture, Food and Water" clearly states that by 2040 – 50, the demand for food will be doubled and when combined with the rising demand for highly water consuming agricultural products like meat, dairy, fruits and vegetables and increasing food and water leakages in the food chain from farm to fork, the problem of water scarcity stands as a barrier for attaining food security for billions of people both in the rural and urban areas. Although, according to projections done by FAO, the level of water can be adequate for total production to meet the demand in 2050, the extreme inequality in the dispersion of fresh water is so tilted against the populations who are predominantly working on agriculture, it becomes obligatory to invest for new water resource management techniques, ranging from small scale to large scale and including rainwater harvesting and full scale irrigation.

Re-engage in the reduction of food losses "from field to fork".
Food losses along the production – consumption chain are considerable and equivalent to a great waste of water resources mobilized at field level. This represents by far the greatest losses in water in agriculture and animal husbandry. Developing programmes to reduce these losses on the demand side of the food chain would generate a significant diminution of the water footprint per capita and would probably as well facilitate access to food by the poorest yet should not take pressure off the efforts to improve system efficiency and efficient use of water in cities, businesses, power generation and agriculture.

Istanbul Water Guide, Article 51

It is apparent that, due to high urbanization and high population increase coupled by climate change, some developing or least developed countries will be incompetent in providing sufficient food for their populations. Consequently, the issue of food security will arise and importing food is and will be a viable option to maintain the needs of domestic populations. However, in the course of solving the food security problem through importing food, the issue of food sovereignty will arise due to troubles related with low levels of exporting agricultural goods for paying back the deficit arose by the imported goods. The protectionist measures of the industrialised countries including tariffs, subsidies limit the chances of small scale and low yield farmers to export their goods in the world markets. Without reaching the world markets, the only solution remains to be competitive in the domestic and local markets. However, the highly subsidized agricultural products originating from the industrialised countries which flush the world markets including the local markets of developing or least developed country markets causing dumping effects and weaken the position of the governments to develop sound domestic/local market schemes to assist the poor farmers. Thus, as some of the audience members have said in 2.3.1 "How to Achieve the Required Food Production to Meet the Growing Demand", the solution cannot be developed only at national levels but rather in the international level where international trade of agricultural products can be moulded in order to assist the small scale and poor farmers of the developing countries and least developed countries.

The crop yield increase is undoubtedly one of the highly revered solutions in the quest to overcome poverty and hunger and promotion of improvement of land holdings is usually presented as the most viable way to attain high crop/water productivity ratios. Even though for some crops like maize, large holdings with high productivity levels decrease water consumption, it cannot be said that small scale farming is ineffective in water use. With high quality seeds, fertilizers, infrastructure and state support, small scale farmers can be even more productive than large scale farmers due to the fact that the farmer concentrates on a relatively small scale area and produces the most out of it when the necessary support tools are provided. The benefits of small scale farming and their potential for effective water use in agricultural production with high crop yield which can be achieved through further inputs and state support cannot be underestimated.

In the development of such markets lies the key to move farmers out of the survival mode, since otherwise people living in urban zones may get imported food products cheaper than local ones.

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Although water's role is indispensible in crop yield increase, it was also noted on many occasions that governments and states must provide other agricultural inputs, credits, post harvesting technologies for sustainable and sufficient crop yield increase in order to eradicate poverty and hunger. In addition, the solution of market linkages and business oriented approaches especially for small scale farmers were presented as a panacea for escaping the poverty trap.

Increasing the intake and volume of low capacity markets, linkages of small – medium size farmers to link themselves to markets and the acceptance of small-medium size farmers to domestic/local markets are predominantly the duty of governments. They are the ones to protect the small scale farmers from fierce

international competition and create an unsaturated market environment for local products and also they are the ones to support infrastructural investment for the transportation and storage of local agricultural products. Thus it must be once more emphasized that governments have to spare more of national or international funds that they raise for the sake of agriculture and alleviating poverty and hunger. While these investments are conducted, they must be done in a rural development perspective, taking into account different aspects and linkages of these investments like environmental sustainability, gender roles and rural entrepreneurship.

Promote small-, medium- and large-scale agricultural development projects.

Governments should promote development of small-, medium- and large-scale, affordable and sustainable infrastructure and other agricultural projects suited to the intended beneficiaries and pay due attention to market access, water cost recovery issues in agriculture, resilience to and managing risks of natural disasters, especially by small-scale farmers, and the possible effects of climate change.

Istanbul Water Guide, Article 47

Subsistence food production and business oriented approaches are necessary and need to be employed simultaneously so as to ensure that farmers meet their basic food demands while at the same time they have the opportunity to escape the poverty trap

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More crops per drops perspective is regarded as restrictive by several of the speakers of 2.3.2. It has been iterated that not only the quantity of the crops but the variety and calorie level of the crops produced are also crucial. While the biodiversity in rural development and nutrition level of the food is standing out in terms of water use in agriculture, policy makers have to take into consideration related concerns.

Agricultural water related goods and services, for example, drought and flood resistant crops and livestock, innovative rural finance insurances, dual purpose roads transport and travel, multiple use and spate irrigation, local level storage facilities, field to fork reduction of losses, weather and price information and knowledge

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Land acquisition of developed countries in water stressed areas like Sudan, Algeria and Pakistan is reflected in the Special Focus Session: "Drops for Crops". However, the capitalised agricultural pattern behind the motive of these acquisitions was not discussed thoroughly. Although some see these overseas agricultural land acquisitions as an opportunity in order to improve the irrigation and other agricultural infrastructures, the fact that the use of agricultural output produced in these acquisitions are usually used as an input for the industries of the home countries in sectors such as textiles or biofuels.

Pricing

The volatile food prices in 2007 – 2008 had revealed that neither the farmers nor the urban dwellers have any benefit from the price increases. During the crisis, it had been argued that the price increase in staple/basic crops like grains and maize will be detrimental for urban dwellers with limited income but the situation would be beneficial for farmers everywhere in the world, however this proved to be false. The price increases had not reflected on the farm gate prices in regions where farmers have to live under $2 a day and hunger and poverty is widespread. Most of the profit went to the intermediaries who are linking these farmers to domestic and if possible to international markets. In this regard, two conclusions arose from the 2.3.1 discussions; first, governments must implement necessary policies to push down the cost for domestic agricultural production which will increase the profits of farmers and through the decrease in market prices, will also decrease the cost of nutrition for the lowest strata of the urban dwellers. Following, governments must link farmers to domestic markets directly through the elimination of intermediaries to increase farm gate prices while reducing the costs.

> Especially in least developed and emerging countries farmers have a specific role in the societies they feed: they are requested to produce food at a price that is affordable in particular to the poorest people living in cities. Through this role they guarantee social stability and as a counterpart, they pay little taxes. This role is very much related to the concept of food-sovereignty; it explains why food prices are not and most probably will never be simply regulated by market rules.
>
> *Synthesis Report of Topic 2.3*
> *"Water and Food for Ending Poverty and Hunger", ICID*

It is certain to claim that agricultural price increases will end up in higher farmer revenues and will thus contribute to the undernourishment problem of millions in today's world. The criticism to this line of thinking came in two ways; primarily, the increase may not reflect itself to farmer revenues. The international and local intermediaries are usually the main recipients of most of the profits. If the reforms to increase the farm gate prices higher are not conducted, it is nearly impossible for farmers living in impoverished life conditions to benefit from the price increases in agricultural production. Second, while the price increases may be beneficial while selling agricultural products, it is unfavorable while buying these products for the people living under $2 a day. These people are the target group of the MDGs and they are the ones who are most deeply affected by the price increases in the recent and previous crisis. If these people (including the both urban dwellers and the farmers in the group) cannot have access to affordable food of different varieties to sustain a humane level of daily nutrition, the MDG targets are beyond reach. The recent data showing the number of people

living on malnutrition has not decreased but increased by 800 million people, indicates the severe effects of agricultural price increase. Consequently, it was underlined by different speakers that while the prices have to remain affordable and not rise to exorbitant levels, farm gate prices must increase and farmers have to receive the benefits from trading of the product that they have put on their intense labour.

The need to reverse the IFI policies that are conducted to restructure agricultural economy through the elimination of subsidies and grain stocks was one of the main points raised in 2.3.4, synthesis session.

In the synthesis session, it was claimed that "one size fits all" solutions in water for food is over and different strategies have to be adopted by countries in different levels of development. Thus a three layer analysis of three development levels (developed, emerging and least developed) is presented (ICID, 2009). However, more region and crop specific analysis and presentations were demanded from the session floor since even these three layers are significantly large and covering a substantively diverse situations.

Support from the Ministerial Process

In the Political Process, the presence of IFAD in the Ministerial process made agriculture, agricultural water use and the role of peasants in the efficient agricultural water use be present in several of the articles of the Istanbul Ministerial Statement. Article 3 states that "We endeavour to improve water demand management, productivity and efficiency of water use for agriculture including, where appropriate, building irrigation networks and also improve rain-fed agriculture to increase crop productivity and conserve water with a view to achieving sustainable production of sufficient food for rapidly increasing populations, and changing consumption patterns, improving living standards, especially in rural areas, and ending poverty and hunger consistent and in harmony with internationally agreed development goals and other relevant international obligations/ agreements".

For effective agricultural water use, agricultural policy reform must be implemented. The first pillar of the agricultural policy reform is to support the peasants who produce basic food products like maize, rice and grains. The production of these peasants will create a domestic buffer during crisis times and pave the path for sustainable subsistence farming. Farmers must not be the first ones to be victimised in times of macroeconomic structural adjustment policies or cutting state expenditures. The dramatic results of the low investment in state expenditures in agricultural infrastructure farming in the last few years have reflected itself on the current food price crisis. Under the circumstances the most efficient yield increasing infrastructural investment will be on the irrigation of land. Through the inclusion of efficient and effective water use in irrigated agriculture, yields can be higher and some farmers who are forced out their land due to extremely

low yields and low competitiveness of their products can have humane living standards in the rural areas. Moreover higher level of funds and ODAs to developing and least developed countries must be provided by donor countries and international financial institutions (IFIs) like the IMF and the World Bank without the conditionality of liberal market measures straining the state investment on agriculture. These funds have to establish and realize the efficient utilisation of state policies first to increase the yields of the farmers and second to protect the farmers who are at the verge of the extreme poverty.

Conclusion

The quintessential role of water in food production was deliberated and discussed through the aim of attaining the MDG for halving poverty by half in 2015.

In this regard the crisis ridden character of the water – food nexus and how important it is to alleviate poverty and increase food supply for the growing world population at the same time is well reflected in various levels of the Forum. The negative implications of financial crisis on the farmer support schemes and channeling of capital for irrigation infrastructure or the ramifications of the sharp increase in urban areas and mainly slums on food demand and production or the implications of volatility in various commodity markets on the inputs of crop yields are embroidered in all the forum processes with the participation of institutions from different backgrounds from different levels.

In order to attain global goals on poverty alleviation and eradication, concrete policy recommendations are voiced for supporting the farmers and increasing the crop yield worldwide. Utilization of different mediums of a single water source or multiuse (US Energy Information Administration, 2009) systems are encouraged especially for the drought or flood extreme regions of the world.

However, it was explicit that the policy recommendations could not be deliberated in the utmost sense. Discussions on the implications of these recommendations for different parts of the world under different circumstances could not be conducted effectively. Many international institutions or states which launched various programs or policies through the insight of these recommendations could have brought them forward for the observation of the diverse repercussions on agricultural water use in different conditions. This could have lead to a more cooperative approach for the discussion of alleviating poverty through more efficient use of water.

The Forum structure facilitated farmers to participate in all processes and the making of all the official documents of the Forum. Especially in the Political Process they have contributed significantly in the consultation process of the official documents and gave a sharper edge to recommendations and pledges on agricultural water use. Additionally farmers, especially low income and small land holding farmers from different regions of the world, who are represented by grand organizations in the Forum, could participate more and voice their

opinions separately. They should have been more eager to respond directly to the recommendations which targeted to alleviate their poverty and intended to increase their crop yield and their marketing abilities.

Following Forums and international meetings must again formalize structures which will enable farmers to participate directly to the processes available. Moreover, farmers' experience with the implemented water policies in the past and the implications of their own agricultural water use practices are of great value. These must be channeled into discussions and more efficient ways to manage agricultural water use must be sought through this. As Pasquale Steuduto, chair of UN Water, underlined; it must be remembered here is no other single group in today's world that is consuming more than 70% of fresh water annually and even slight changes in their water consumption schemes can alter our aspirations greatly about attaining the prevention of hunger and poverty.

It was obvious that more representation from the agricultural sector and from the peasant organizations – local or international – was needed in the forum. The top down advices of the international and UN agencies which were delivered in the fashion of "one size fits all" approach and enmeshed with the market imperative was inadequate in responding to the problems of the real actors of the agricultural sector who are both the producers of agricultural output and the ones who are directly affected by the symptoms of any local or global agricultural crisis. At the same time, while most of the time was devoted to solving the problem of hunger and poverty and reaching the related MDG, not much has been said about the root of the problem that is not directly linked with the low global production of the agricultural output but more with the distribution of the output and the inability of the poor peasants to market their products.

Genetically modified crops and water reuse for agricultural consumption were not discussed in the Forum.

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MIGRATION

Günnur TAŞKAN

The International Organisation for Migration (IOM, 2010) states that approximately 3% of the world's population is living outside their place of birth. This percentage might seem small; however, put in numbers, it means that 1 person out of every 35 is a migrant. Migration is not necessarily a scare factor. If managed properly and orderly, it serves both the individuals and the societies as an essential part of the economic and social life. For that purpose, it is necessary that the policy makers understand this multidimensional phenomenon and develop a comprehensive and cooperative approach in order to manage international migration.

Global change is considered to be the main reason behind migration. The (IOM, 2010) summarizes the following as the causes of migration:

- Demographic trends
- Economic disparities between developing and developed countries
- Trade liberalization necessitating a more mobile labour force
- Communication networks linking all parts of the world
- Transnational migration

Migration is a significant article on the international agenda of the 21st century. Not only due to its socio-economic impacts but also as a result of its direct link to the use of water and infrastructure both in the country of origin and in the destination country.

Despite the fact that migration was not necessarily the most significant subject in the thematic sessions, it was an indispensible part of the "Adaptation to Global Changes" Theme. For the first time in Istanbul, migration was an issue of major concern in the World Water Fora, therefore Istanbul should also be seen as the host of the commencing meeting for the World Water Forum discussions on the relationship between adaptation, water and migration.

When populations face natural disasters or environmental changes over time, migrating to another destination has always been part of the possible adaptation strategies (Boncour, 2010). Topic 1.2 of the Thematic Process was entirely devoted to the talks on "Water-Related Migration and Changing Land Use and Human Settlements and Water." The United Nations University (UNU-EHS) in Bonn, Germany, the Southeastern Anatolia Project (GAP) in Turkey and the United Nations Decade Programme on Capacity Development (UNW-DPC) have worked together, as the topic coordinators to illuminate questions on rural to rural, rural to urban and crossing borders/seas migration. Different dimensions of the subject were put on the table: Session 1.2.1 looking at the Rural-to-Rural Migration, Session 1.2.2 was concerned with the Rural to Urban Migration, Session 1.2.3 was titled Crossing Borders/Seas and finally Session 1.2.4 wrapped up these various aspects to provide concluding remarks on the issue.

Rural-to-Rural Migration "Imbalances between Water, Land and People: The Drivers of Rural Migration"

The session 1.2.1 on Rural to Rural Migration was composed of four panels, which tried to identify linkages between migration and major global changes;

- Climate Change
- Changing Land Use
- Resource Disputes
- Rural Resettlement Programmes.

Climate Change

Ton Bresser, from UNESCO-IHE Institute for Water Education opened the panel discussions by emphasizing the importance of identifying the actual *reasons* behind people's choice to migrate. According to Bresser, migration could cause a huge problem for the destination/ target country. He argued that building institutional resilience via encouraging people to think about the future of climate change and to understand the situation and impact of disasters could prevent people from migrating. Hence, *capacity development* and *education* have been presented as important prevention strategies. Dr. Galina Stulina from the Scientific Information Center of Interstate Commission for Water Coordination of Central Asia (SIC ICWC) brought in the example of migration from Uzbekistan to Kazakhistan pointing out to the fact that in this case people migrate due to environmental, economical and social issues. From the audience, Prof. Dr. Ursula Oswald of the National University of Mexico (CRIM-UNAM) contributed to the discussion on migration by suggesting that often people who migrate are the ones who can afford to and have the possibility to migrate, which also brings about the problem of brain drain. Without disagreeing with Prof. Dr. Oswald's point, Tim Kasten from the United Nations Environment Programme (UNEP) underlined the increasing number of the major disasters due to climate change and pointed out that the UNEP's work on disaster and conflict situations indicate that environmental conditions and climate change can lead to significant amount of migration of the poor people. According to Kasten, brain drain surely occurred, yet often enough it resulted from economic factors and not climatic ones.

A strong anticipated cause for migration is the climate change. For one, the rising sea levels, as a consequence of the climate change has a direct impact on the inhabitants of hotspots like the small islands. Second, disasters such as floods and droughts play an important role in people's decision for temporary refuge, yet these temporary displacements sometimes turn into permanent migrations. In other words, migration is often considered as an effective adaptation measure by the people that are faced with the climate change threats.

Prof. Dr. Janos Bogardi, United Nations University-Institute for Environment and Human Security (UNU-EHS), Moderator of the Session 1.2.1

Furthermore, panellist Sergio Zelaya-Bonilla, United Nations Convention to Combat Desertification (UNCCD) highlighted the *gender* aspect of migration that is not always given the attention that it deserves. He stated that although it is the men, who take the decision to migrate, *women* are the ones who are actually in charge of bringing water to the households and to the agricultural crops. Moreover, women are the ones, who transmit knowledge to future generations. Zelaya-Bonilla pointing out the issue of *land degradation* that is causing people to migrate all over the world, recommended that sustainable land management, water management and flood management should be well addressed in dealing with migration.

In the outcome of the panel, majority of the panellists and members of the audience stated that *political will* is the initial step for the governments to move forward with the adaptation and prevention strategies of migration. Tim Kasten, UNEP reminded that once the political will and the commitment of the governments are achieved, there are other steps to be taken such as raising awareness – many countries do not see the direct link between migration and climate change, formulating future scenarios for climate change to plan water resource management and capacity building – in order to be able to implement these management strategies and help people in dealing with uncertainties.

Changing Land Use

A perfect storm of food scarcity, global warming, rocketing oil prices and the world population explosion is plunging humanity into the biggest crisis of the 21st century by pushing up food prices and spreading hunger and poverty from rural areas into cities.

Mohamed Ait Kadi, General Council of Agricultural Development, Morocco, Panellist at the Session 1.2.1

Dr. Parviz Koohafkan from the Land and Water Division, Food and Agriculture Organization (FAO) started the panel discussing how spatial planning, land use and water management are important factors in preventing migration. However, he underlined that it is more fundamental to ask whether it is really the desire of the policy makers to stop migration at all. Dr. Koohafkan stressed the fact that particularly in the developing countries, there is simply *no investment in agriculture* in rural areas. In most of Africa, he added, the budget for the Ministry of Agriculture is about 10% which is less than the budget for urbanization and industry. Furthermore, out of that 10%, 90% is usually spent on paying the salaries of the employees of the ministry. In other words, there is *no rural prioritization*, nor specific employment creation in the rural areas to prevent migration and maintain the residents in the rural areas. Rudolf Cleveringa, International Fund for Agricultural Development (IFAD) supported the idea of improving the coordination between the land use management, water policies and investing in agriculture and rural areas to prevent migration. He also added that it is vital that the specialists should *get back to the farmers* and listen to their problems and make sure that *agriculture is back on the real investment agenda*. Prof. Dr. Ahmet Nuri Mermut, Harran University, Turkey seconded the importance of reaching out to the people who are affected by migration and drove attention to their lack of representation among the forum participants.

Dr. Zafar Adeel, United Nations University Network on Water, Environment, Health (UNU-INWEH) pointed out that agricultural tradition could not answer all the questions about migration and often enough even farmers prefer alternative solutions. Adeel suggested that *new systems such as eco-tourism* like in the examples of China, Jordan and Tunisia could be introduced, which might be a

good step in order to *involve women* in the economy as well. Furthermore, it was proposed by Dr. Parviz Koofkan, that diversification is an essential element of adaptation to climate change, therefore, preventing migration that is resulting from it. People should use local food as much as possible to reduce transportation and thereby the carbon and water footprints in consumption.

In the outcome of the panel, it was once again underlined that the quality of life has to be improved in rural areas in order to prevent migration, for which it is indispensable that governments show *political will* to encourage people to stay in their land of origin. As the economic and financial outcome, in addition to the creation of alternative solutions to prevent migration such as eco-tourism and aqua-culture, it was suggested that it is very important that farmers are given the chance to decide for the cropping patterns and not the government. Yet, new technologies especially for irrigation should be introduced to decrease the consumption of water in rural areas also.

Resource Disputes

During the panel discussion on resource disputes under session 1.2.1, panellist Mohamed Ait Kadi, General Council of Agricultural Development, Morocco stated that there is a resource dispute between the agricultural and industrial sectors. In addition he underlined the direct link between agriculture and *food chain* and reflected upon 2008, the year of *global food crisis.* Similar to the proposals of the panel discussion on changing land use, as solution to the problem, 3 alternatives were suggested: 1) increase the productivity in agriculture, 2) more crops per drop, and 3) diversification in the rural economy. In addition, creation of small rural towns was offered in order to decrease migration to the mega-cities.

Tim Kasten, UNEP stressed the need to expand multi-stakeholder dialogue at the national and international levels to avoid water conflicts, which have an increased potential to occur in the future due to water scarcity. Additionally, Integrated Water Resources Management, with its three dimensions: 1) equity, 2) environment, 3) economy, has been identified as an obligatory measure. Kasten also proposed that lack of adequate process and dialogue among the stakeholders and the locals is the cause of conflict about the dams. Kasten suggested that in order to achieve the best possible result for the communities involved, people who are positively or negatively affected should be consulted and Environmental Impact Assessment should be carried out.

Wasim Wagha, DAMAAN Development organization, brought in the example of Pakistan, where water management itself created a struggle that is apparently still going on. Due to construction of new dams people had to migrate from their lands of origin. Hence clashes of interest about land and water resource disputes also triggered migration. In such cases, Wagha suggested that government should consult with the local people before taking any final decisions.

Prof. Pieter van der Zaag, UNESCO Institute for Water Education (UNESCO-IHE) asked "How can limited resources be managed to prevent conflicts?" Prof. van der Zaag suggested that one way to use water more productively to answer

> Migration is a very big problem in China, but there is a policy about resettlement. Government has paid all families for building up their home and provided the infrastructure and allowed the re-settlers to use their land for agriculture. Also what is important about this policy is that 85% of the population has to accept the resettlement programme. If the acceptance is less than 85%, the resettlement programme could not be implemented.
>
> *Prof. Xiaotao Cheng, Institute of Water and Hydropower Research (IWHR), China, Panellist at the Session 1.2.1*

this question is capacity building and investing in infrastructure at the local level. Prof. Bogardi, UNU-EHS agreed that water conflicts are unavoidable and that they should be tackled at the local level. He recommended that development agencies should invest in rural development and in case the conflicts reach a larger scale diplomacy and cooperation should be the method of resolution as water is too precious to fight over.

Rural Resettlement Programmes

This final panel discussion in Session 1.2.1 on Rural Resettlement Programmes was built on the discussions of previous panels. Turan Hazar from Ankara Rural and Urban Development Foundation mentioned three types of resettlement programmes: 1) disaster resettlement, 2) refugee resettlement caused by wars and 3) development project resettlements. It was stated that there are several negative effects after resettlement such as homelessness, landlessness, marginalization, mortality, loss of existing social properties and food security. In order to solve these problems, Hazar suggested that a concrete resettlement plan is a necessity; resettlement plans should include acquisition and settlement, resettlement implementation plans, income restoration plans and monitoring. In addition, resettlement plans should be sustainable and participatory. Resettlement projects should be seen as a twinning project to the main dam project and the costs of resettlement should be included in the economic analysis.

Finally, panellist Mohamed Ait Kadi, General Council of Agricultural Development recommended to the UNU-ESE to consider establishing an international collaborative research programme, which could tackle these issues that could constitute the basis for political discussions.

Rural-to-Urban Migration "Rural Migrants in Urban Slums: Dreams Fulfilled or the Beginning of a Nightmare?"

The session 1.2.2 on Rural to Urban Migration was composed of four panels as well:

- Rural/Urban Water Conflict
- Urban Slums
- Overloaded Infrastructure
- High-Level Panel Discussion.

Rural/Urban Water Conflict

After the brief introduction of the speakers and the topics by the moderator, Azime Tezer from Istanbul Technical University, Ms Chizoba Chinweze, Chemtech Associates Limited, Nigeria reflected on the negative effects of climate variability on food productivity and how as a result people start to migrate. Chinweze also pointed out to the problem of uncontrolled and increasing demand for water in the urban settings as a result of migration, that calls for adequate planning for sustainable development and sound environmental management of the ground water resources

Moreover, it was mentioned that the researches are pointing out to the depleting water in Congo and in Chad, which together with the environmental and climatic changes are now becoming priority issues. Finally, Ms. Chinwese underlined the importance of institutional arrangements that should be undertaken in order to avoid any conflict that might result due to the transboundary water between Congo and Chad.

In addition, Dr. Alberto Tejada-Guibert from UNESCO International Hydrological Programme (UNESCO IHP), talked about the conflict that might arise between rural and urban areas as a result of competition for water resources and underlined the fact that this conflict is much more serious in developing countries because of the uncontrolled migration. Dr. Tajeda-Guibert also stated that a law proposal about transboundary aquifers has been submitted to the Member States for consideration.

Ms. Kuntala Lahiri-Dutt of the Research School of Pacific and Asian Studies at the Australian National University claimed that the urban people consume more water than people in the rural areas. Ms. Lahiri-Dutt, suggested that environmental degradation and lack of job opportunities force rural people to migrate and many people, especially women, find themselves in marginal and risky situations which as a result could cause conflict.

Urban Slums

During the panel discussions on urban slums few key messages were expressed that were generally agreed upon. The relationship between technology and migration was brought to discussion by Yener Akar, GAP Administration, Turkey. Akar argued that we no longer measure distances in metres or kilometres but rather in time. Technology was introduced as a parameter to ease migration: due to the growth speed of technology, the borders between urban areas and slums are shrinking, slum populations are also becoming aware of the demands of urban populations, which trigger their wish to migrate to urban locations unless their needs are provided for. Hence it is a question to be answered: Does technology affect migration positively or negatively?

Representative of the United Nations Human Settlement Programme (UN-Habitat), André Dzikus pointed out that the network system is one of the biggest challenges in the slum areas. Dzikus further added that 50-60% of produced water is unaccountable due to the slum areas in developing countries, which makes it an absolute necessity to expand the network system to the slum areas to offer solutions to the problem. As part of the discussion on the possible upgrading programmes for the slum areas, Dzikus underlined the importance of showing special consideration for women and children. Ms. Ayşegül Fazlıoğlu from the GAP Administration and Ms. Kuntala Lahiri-Dutt supported the idea that any planning for upgrading slum areas should pay special attention to the needs of women and children.

As a solution to the urban water management issue, Prof. Kalanity Vairavamoorthy from the University of Birmingham, UK suggested that the value of the slum areas, just like their contribution to the economy should be recognized and more

stakeholder (slum residences, local authorities, businessmen, NGOs) engagement was necessary.

Overloaded Infrastructure

The panel on Overloaded Infrastructure was opened with the Organization for Security and Co-operation in Europe (OSCE) representative Marc Baltes' brief introduction of the panellists as the moderator. The first panellist, Prof. Xiaotao Cheng from Institute of Water Resources and Hydropower Research (IWHR) explained that rapid increase in urban population, causing an overload of the infrastructure in the cities is one of the biggest problems in China. Although China is known to be an agricultural country in history, Prof. Cheng stated that since the 1950s the urban population increased from around 10% to 40%. *"Village inside the city"* is the term that is commonly used in China to describe this situation where the cities expand rapidly to surround the villages. Residents of these areas work in the city centre but still live in rural parts. Prof. Cheng emphasized that the Chinese government is paying attention to this problem and that it is his hope to learn from other countries' examples via the 5th World Water Forum.

Secondly, Asst. Prof. Nilgün Görer Tamer, from Gazi University, Turkey gave a presentation on migration and water scarcity in Turkey. Görer talked about the water scarcity Turkey suffered from in 2007, especially in the capital, Ankara, which showed clearly that the local authorities lacked sufficient management plans. Another topic that was touched upon was the question of whether or not regional development policies should put more emphasis to the medium scale cities as a means of preventing the uncontrolled development of megacities and increasing pressure on water resources. Görer also suggested that the mega cities should plan their infrastructure considering the possibility of big events such as the Forum taking place and thousands of guests increasing the city's population even if it is for a temporary period. Finally, Görer underlined the importance of providing water infrastructure to the slum areas especially due to health concerns of the city.

Finally, Dr Jürgen Welschof of KfW Entwicklungsbank, Germany talked about migration in the Middle East, which should be considered as an unexpected situation (i.e. resulting from war or conflict). Dr. Welschof focused his attention on financing water service systems and stressed that financing is as important as planning. According to Welschof it is vital to provide flexible financial systems and to have enough available financials. Major part of the water services' financing comes from banks, taxes and water clients however the self financing capacity of the most utilizers is very limited. Also utilizers and local authorities do not feel that they are really responsible for the immigrants or the "new comers "as they are considered which should be changed legally. KfW , Welschof said, has been concentrating on medium scale cities in many countries but this is certainly not enough on its own. It is necessary to adopt a more comprehensive development approach to apply to the medium scale cities.

Unfortunately, financing water services has some major challenges, the biggest being the problem of raising internal revenues within the sector. In addition, the lack of appropriate plans or projects is posing a challenge for the investment banks as well.

Crossing Borders/Seas: Does Water Accessibility Drive Cross Border Migration?

In contrast to the segmented, multi-panel structure of the previous sessions, the session 1.2.3 on Overland and Overseas Migration, moderated by Dr. Philippe Boncour from the International Organization for Migration, was organised around two major parts: 1) crossing borders; 2) crossing seas. Nonetheless, knowing the crosscutting nature of the topic, organizers tried to keep the discussion intact by focusing on the questions they have put forward to the panellist in advance.

The World Bank representative, Dr. Vahid Alavian, opened up the panel discussion by introducing the three major formats that the migration takes place. Firstly, according to Alavian, *migration* is defined as the transfer of people from rural areas to urban areas. Dr. Alavian added that this kind of migration primarily results from economic factors, which are followed by the environmental ones. Although it is usually considered that megacities are the target/destination cities for migration, people now tend to move to smaller cities rather than full capacity populated big cities. However, smaller cities lack the necessary utilities to provide service for the immigrants. Secondly, the discussion pointed out that further elaboration on the issue of *brain-drain* is required. As a result of the brain-drain both the country of destination and the country of origin suffer. Hence there should be incentives for these people to go back to their original countries. Finally, Dr. Alavian talked about the *reverse migration* that takes place when people moved abroad for various reasons decide to go back to their countries of origin. Reverse migration is also an issue for the countries especially if it happens in large quantities since the country of origin is expected to accommodate for the needs of its former citizens.

Ignacio Sanches-Cohen, the national coordinator of the Water and Soil Research Net of the National Institute of Forestry, Agriculture and Animal Husbandry Research (INIFAP) seconded Dr. Alavian's point on economics being the most important factor in causing migration, however he also added that it is very difficult to disintegrate the various causes of migration and highlighted that for the past fifty years climate change is also causing people to migrate. Especially due to lack of water in the reservoirs, agriculture is directly affected and as a solution farmers sell their lands to move. Yet, Sanches-Cohen stated that the impact of water scarcity on migration is not well documented, which is making it difficult for decision makers to act upon it. Finally, Sanches-Cohen emphasised the importance of Integrated Watershed Management Programmes (IWMP) for promoting economic growth and called for prioritizing transboundary watersheds on their agendas.

Marc Baltes, representing the Organization for the Security and Co-operation in Europe (OSCE) was also among the panellists and he illuminated a completely different dimension of the migration issue. According to the facts Baltes shared, from the 6.7 billion world population, migration from developing to developed countries is expected to be an average of 2.3 million people annually. Considering how large this figure is, migration becomes a priority in the security context as well. Especially because if the basic freedoms and needs of people are not met in the country of destination people could be easily attracted to violence, civil unrests and even extremism, which might then create national and international instability.

"Nile Basin Initiative: the government took a deliberate decision to hire professionals, who originated from the region but moved abroad to come back and work for the Initiative."

Dr Vahid Alavian, the World Bank, Panellist at the Session 1.2.3

Troubled Migration from Afghanistan to Pakistan Challenges are quite substantial:

- The region is already affected by social, political and economic instability. Migrants further increase the instability.
- Migrants also bring along capacities, which if managed affectively can be utilized since the water management system is quite labor intensive.
- Use the indigenous knowledge that is already available and recognize it and document it.
- People wouldn't invest in these arid regions due to political concerns but the indigenous knowledge that is available in the region would be useful for other arid parts of the world as well.
- Forums such as this one provide great opportunity to initiate dialogue between the Pakistani government and foreign investors to invest in Pakistan.

Humaira Daniel, Research Associates, United Nations University, Institute for Environmental and Human Security (UNU-EHS), Panellist at the Session 1.2.3

Baltes also agreed that economic and environmental factors play a significant role in migration dynamics and he suggested that the objective should be to asses/ estimate these factors in order to ensure effective migration management. Furthermore, the impacts of the *global financial crisis* causing uncertainty in rich and poor countries alike would also force the legal migrants to bear the effects as well. Migrant remittances which are of crucial importance to many countries are likely to decrease. As a result, poverty may rise, which in return increases the potential for conflict to arise, thus the discussions on international migration should be handled with utmost urgency. It was proposed that enhancing cooperation between destination, transit and origin countries both at the bilateral and regional levels would benefit the process. In addition, it was recommended that adaptation and reaction capabilities should be in accordance with the changing realities.

Wrapping-up Migration

First time ever in the World Water Fora, the issue of migration was given special attention in the Forum Programme in Istanbul. Thematic Process included migration as a part of Theme 1: Global Changes and Risk Management and an entire topic (Topic 1.2) was reserved to discuss "Water-Related Migration, Changing Land Use and Human Settlements. Although the topic title was "water related migration", participants of the topic seemed to deviate, and comment on migration in its broader context. However, considering its inaugral nature, the discussions on migration were essential for evaluating the importance of the issue for the participants, identifying the benefiting and problematic outcomes of migration and formulating recommendations for handling migration. Appropriately as a major part of the forum planning in all its dimensions, thematic, political and regional in the future. Some of the key points summarizing the thematic discussions on migration were:

- *Climate change and Migration.* Any current discussion could reach a point one way or another where climate change is identified either as a cause or as the outcome of a certain situation; however whether migration is really a part of the discussion on climate change is still a question mark. It is not necessarily because migration is NOT affected by or resulting from climate change but because studies so far did not really question this aspect. There is also an international debate on biodiversity ecosystem integrity, environmental consciousness, and those debates sometimes overlook ecosystems are not only plants, birds and physical environment, but also human beings. So we are part of those ecosystems even if we sometimes behave against them.

- *International Community.* There is also need to look at the issue from a different point of view by the international community. Climate change does not have to be seen as a constraint, it could also be a major factor in development. The migration dialogue in the UN system only concentrates in labour migration and intergovernmental issues of migration. How far environmental concern, water issues penetrate the mind set of

people to migrate is a question still need to be answered.

- *Recognition of migrants.* Recognition of the migrants by the political, international and legal frameworks has been discussed. Small scale migration at the individual and village level should not be forgotten. "Rural to Rural" context could be "cross border" as well. Also water is very essential but is not a unique factor of livelihoods. Agricultural carbon sequestration, forestry and other elements have to be taken into account in order to understand the reasons behind people's decision to migrate.
- *Resettlement projects.* It was argued that these projects involve large scale decisions to migrate without considering individuals' opinions. It was suggested that dialogue with the stakeholders is a must and that it is up to the indigenous people themselves to decide on their own if they want the development and sustainability of their rural communities. How much self-regulatory power people can bring into very complicated coexistence and cohabitation?
- *Megacities.* The problem of urban crisis is generating villages inside cities. Mega city developments result in slums. Cities need to be inclusive.
- *Migration Culture.* Human history is a history of migration. Human migration is as old as human history as well. Borders are artificially created. Migration could bring together communities instead of separating them.
- *Gender.* It has to be accepted that even if legally equal, men and women are physically and socially are not identical. Women and children are more vulnerable.

Political Process

Migration was briefly touched upon during the *Political Process* of the Forum. It was only counted among the global changes in the Istanbul Declaration of Heads of States on Water and it was not mentioned in any other context.

Similarly the Ministerial Statement listed migration as one of the driving forces of global changes but not in relation to water scarcity. Istanbul Water Guide, the document that was discussed during the ministerial process meetings and annexed to the ministerial statement was written as a linkage document between the thematic, regional processes and the political process. Thus it included a section on the issue of migration. These articles could be considered as a good initial step for the political discussions on migration, yet they cannot be considered adequate.

The Parliamentarian Process focused on four topics: global changes, access to water and sanitation, transboundary waters and decentralization. Unfortunately, though some comments were made during the discussions, the outcome of the process did not take any notice of the issue of migration. Furthermore, the Istanbul Water Consensus – the outcome document of the Local Authorities meetings did not take migration into consideration either.

Istanbul Water Guide articles on Migration:

Article 18 – Improve the knowledge base on the change of water-related population dynamics.
Article 19 – Strengthen institutions and policies, which bolster resilience in populations.
Article 20 – Increase awareness about the impact of environmental degradation.
Article 21 – Develop sound monitoring systems.
Article 22 – Improve legal framework.
Article 23 – Provide adequate humanitarian response.

Summing up, the migration issue was not paid much attention in the political process of the forum. This is rather disappointing considering the thematic discussions underlined the importance of political will in offering solutions to the problematic aspects of migration. Thematic discussions also stressed how the responsibility of the local authorities is increased as a result of the migrants either leaving or coming to cities under their authority. Therefore, even if the topic was not given a major discussion platform in ministerial meetings, a thorough discussion of migration would have benefitted the local authorities considering the opportunity the Forum provided for sharing international experiences. Further emphasis should be devoted to the issue in the upcoming World Water Fora.

Regional Process

The Americas Region included the topic of migration on their agenda.

Messages from the Americas on Migration and Changing Land Use:

Population evolution, migration and urbanization:

- *Foster the preparation and implementation of national plans for integrated water resources management*
- *Take measures to reduce the effects of uncontrolled urban and suburban growth.*
- *Ensure in each country access to safe water (quantity, quality, continuity, reliability and accessible cost) and sanitation services.*
- *Promote the management of water demand, via incentives for conservation, efficiency of use and adequate waste management systems.*
- *Renew drinking water supply and drainage infrastructure systems, which, in several countries are nearly outdated.*
- *Improve the operational efficiency of water supply and sanitation service providers, assuring their financial sustainability.*
- *Strengthen mechanisms and instances for meaningful stakeholder participation in decision making processes related to water.*

Land Use Changes:

- *Establish policies for land-use planning (territorial ordainment) which will ensure the sustainability of natural resources.*
- *Implement national land-use plans that clearly account for the nexus between land use and wate r resources management.*
- *Establish economic instruments to promote forestation and reforestation, in conformity with national and international legistation.*
- *Apply measures fort he recovery of degraded areas*

"Key Messages from the Americas", Global Water Framework, 5th World Water Forum General Secretariat, Turkish Ministry of Foreign Affairs, World Water Council, 2009, Istanbul

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DATA AND TECHNOLOGY

İdil YILMAZ

DATA

Data is crucial for informed decision making in water resources management. Quality data is necessary for understanding the systems concerned, which leads to better management of resources. The absence of detailed hydrological data, on the other hand, leads to limited understanding of water resources and disaster risks, poor infrastructure design, ineffective planning, bad management and, ultimately, failure. Data availability and quality was a crosscutting subject that was discussed in many sessions of the Forum. It was the first time in the history of the World Water Fora that a whole thematic topic was dedicated to data and information, Topic 6.4 "Data for All", which was regarded as a step forward for developing result-oriented solutions. The four sessions under this topic covered data collection, bringing data to information, barriers to access data, concluded by a synthesis session.

As the UN World Water Assessment Programme Side Publications Scientific Paper on "Investing in Information, Knowledge and Monitoring" (The United Nations World Water Assessment Programme (UN-WWAP), 2009) underlines the problem as "*what data is available is incomplete and uneven*" and "*even when the quality of data is good, access to it is often very limited*". The challenges faced in the water sector are growing, but the quantity and quality of available data which provide the information for guiding and monitoring the responses is still inadequate. Indeed in many regions, data availability is decreasing. More financial resources are being put into global processing of information instead of doing measurements on the ground. There is a need for a change in paradigm, for no sustainable decision can be made without data.

The importance of data collection and data exchange was raised most frequently in the Asia-Pacific, Africa and Turkey In/Around regional sessions. In the Theme 6 Wrap-up Session, it was mentioned that more importance should be paid to the subject of data and data collection and application should be elevated on the agenda of the next World Water Forum.

The Right Data at the Right Time in the Right Way

Collecting the right data requires collaboration between data collectors and data users. As underlined in Session 6.4.1 "Data Needs and Data Acquisition", data provision and interpretation should be demand-driven instead of supply-driven and should reflect the needs of different disciplines and different users at different levels. Water and environmental monitoring programmes and data collection systems must be clearly specified and well designed according to the requirements of the data and its user communities. In order to make the most effective use of data sources, data needs should be carefully identified and data collection systems should be designed according to the type of data that is needed and the way it should be collected. The choice of which data to collect is critical, for the wider the range of the data, the complicated is the data collection process and the greater is the waste of resources. Participants of Session 6.1.1 "Knowledge for All, All for Knowledge" pointed at the fact that very often research results do not respond to the needs of practitioners and advocated that practitioners should therefore be able to influence the research agenda to adapt it into the real urgent needs. A good example is IWRM-Net[1], the Regional and National Research Programmes Network on Integrated Water Resources Management, which is an open network of 17 research programme managers throughout Europe aiming at identifying the research needs and implementing joint research programmes through communications between different stakeholders.

Data Financing

In Session 6.4.2 "Data Integration and Dissemination: From Data to Information", it was emphasized that countries need to increase resources devoted to data collection, data integration and dissemination and should receive assistance from the international donor community where appropriate. Participants of Session 6.4.4 "Action to Ensure Data for All" recommended that the economic value of hydrological data and information should be seen as good investments with high-quality returns. Along the same lines, in Session 6.4.3 "Barriers to Data Availability", it was suggested that industrialized nations should provide resources on data collection improvement for the poorer nations. These ideas were also supported in the IWG, where Article 139 promotes investing in data and recommends that "*the collection, analysis and compatibility of critical data and information should not be regarded as an expenditure, but as a creditable investment*", while Article 141 advocates that "*the United Nations, the World Bank and other international agencies and development partners should assist countries with comprehensive projects, in order to improve their data collection networks and build the knowledge and information bases that are needed to develop and manage water resources in a sustainable manner*".

[1] http://www.iwrm-net.org/

From Data to Information for Decision-making

Current institutional frameworks and processes are not allowing data from the monitoring, hydrological and economic systems to be joined together. "The whole sector is operated on soft coordination and management; there is no requirement to do these things in a regular systemized way. The days of soft coordination and institutional arrangements in the area of data collection, dissemination, process and integration are over."

Michael Vardon, United Nations Statistics Division, Theme 6 Wrap-Up & Synthesis Session

As highlighted in the Second United Nations World Water Development Report (WWDR-2) (The United Nations World Water Assessment Programme (UN-WWAP), 2006), *"merely collecting data is not enough. It must be brought together, analysed and converted into information and knowledge"*. In Session 6.4.2 "Data Integration and Dissemination: From Data to Information", it was argued that it is only when the data has been collected and analysed that the many systems that affect water (hydrological, socio-economic, financial, institutional and political alike) can be properly understood and this understanding can be factored into water governance. IWG Article 144 highlights that *"data in the hands of water managers enhances their capacity to develop practical solutions"* and promotes the strengthening of the use of data in decision making.

The challenge is how to translate available data and information into usable knowledge for water management in an integrated manner (Session 6.1.1 "Knowledge for All, All for Knowledge"). Data needed for informed decision making is not just about hydrological data, but also information about economic, social and environmental variables. The lack of integrated water data is a systematic impediment to informed decision making related to the sustainable use of water resources. Successful water management therefore calls for an integrated framework between hydrologists, economists and social scientists in order to have a holistic approach and to arrive from data to information (Session 6.4.2 "Data Integration and Dissemination: From Data to Information").

Sharing Data, Information and Know-how for a Better Global Water Resources Management

"The sharing and strengthening of global knowledge for development can be enhanced by removing barriers to equitable access to information for economic, social, political, health, cultural, educational, and scientific activities and by facilitating access to public domain information, including by universal design and the use of assistive technologies."

1st World Summit on the Information Society (Geneva, 2003), Declaration of Principles, Article B.3.25.

A continuous and systematic exchange of reliable, up-to-date and relevant data, information, know-how and experiences among institutions and stakeholders at national, regional and international levels is crucial for data sustainability and improved global water resources management. Participants of Session 6.4.2 "Data Integration and Dissemination: from Data to Information" recommended that countries should develop strong legal and institutional arrangements to establish policies and procedures for data sharing. The arguments in Session 1.1.1 "Dialogue on Regional Perspectives on Water, Adaptation and Climate" advocated a systematic approach both in national and regional levels in terms of analysis of climate change, data monitoring and validation in order to be able to build national and regional strategies. In Session 6.4.3 "Barriers to Data Availability", discussions promoted a free global data flow and it was stressed that implementation of existing international resolutions on data sharing similar to Kyoto Protocol should be enforced through certain mechanisms.

Regional data sharing is becoming more important in terms of disaster mitigation, which calls for transparency between neighbouring countries sharing both surface water and groundwater basins. One good example to regional data shar-

ing initiatives is MEDSTAT II[2], the Euro-Mediterranean statistical cooperation programme, which provides its 37 partner countries with high quality statistical data necessary for better water management (Session 6.4.2 "Data Integration and Dissemination: From Data to Information"). Another good initiative is the new Pan-African Framework for water sector monitoring and evaluation which aims to improve and harmonize data gathering and exchange at the national and regional levels (Africa Regional Session).

International resolutions on data sharing

- The UN Conference on Environment and Development (Rio de Janeiro, 1992) - *calls for a global commitment to promoting access to information at the national level*
- The UN Commission on Sustainable Development (1998) - *promotes the broadest exchange and dissemination of water-related information, in particular to developing countries*
- The twelfth session of the Intergovernmental Council of the UNESCO International Hydrological Programme (1996) - *a resolution on international exchange of hydrological data for research at regional and international levels*
- The UN Convention on the Law of the Non-Navigational Uses of International Watercourses (1997) - *promotes regular exchange of "readily available data" between states of international basins*
- The Twelfth and Thirteenth World Meteorological Organization (WMO) Congresses (1995, 1999) - *resolutions on meteorological and hydrological data sharing among 170 WMO member states*
- The Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC) and United Nations Convention to Combat Desertification (UNCCD) recognize the requirement for full, open and prompt exchange of hydrological data.

Vladimir Smakhtin, Session 6.4.3

The subject of data, information and knowledge sharing and cooperation between nations was also acknowledged in the various political outcomes of the Forum.

2 http://epp.eurostat.ec.europa.eu/portal/page/portal/medstat/introduction/

Political Outcomes of the 5th World Water Forum on data and information sharing

Istanbul Ministerial Statement Article 11 supports improving water-related monitoring systems and **making information freely available** to all concerned populations, including neighbouring countries.

Istanbul Ministerial Statement Article 17 invites "*international organizations and institutions to support international effort to enhance the dissemination of experiences and sharing of best practices on sustainable water resources rehabilitation, protection, conservation, management and utilization*".

Istanbul Water Guide Article 65 "*Through the sharing of technical knowledge and data and information exchange and coupled with joint monitoring/data collection schemes, nations can work closer together, build relationships and improve understanding between each other*".

Istanbul Water Guide Article 143 promotes **international exchange of hydrological and related data and products** for informed regional and global studies of water resources and climate change for the benefit of mankind.

An initiative example for information sharing: Water Legislation Help Desk

The Parliamentarians' Process of the 5th World Water Forum launched the idea of creating a permanent international "Helpdesk" to provide legislative and policy aid on water issues for Parliaments and Parliamentarians.

The Water Legislation Helpdesk aims to provide Parliaments and Parliamentarians a clearinghouse of expertise for:

- Sharing knowledge and experiences in all areas related to water legislation (recently introduced legislation, reports of Parliamentary water committees and information on national legislative activities, comparative experiences and best practices), services and governance;
- Providing Parliamentarians with background information on the most important water-related issues;
- Helping countries to develop their own legislation;
- Enabling Parliamentarians to send questions to experts who have direct experience in establishing and reforming water legislation; and
- Linking Parliamentarians with one another through the Helpdesk network.

The Water Legislation Helpdesk will be accessible to all Parliaments and Parliamentarians interested in water issues from developing to developed countries.

From Water Legislation Helpdesk Document of the Parliamentarians' Process
Full document is available online at: http://content.worldwaterforum5.org/files/PoliticalProcess

Istanbul Water Guide
Theme VI: Education, Knowledge and Capacity Development

Element 4: Access to Data

139. Invest in data. The collection, analysis and compatibility of critical data and information should not be regarded as an expenditure, but as a creditable investment, often financed by tax payers, with high-quality future returns. In particular, the number of basic hydrological stations in many countries is inadequate to satisfy even the minimum needs and yet National Hydrological Services have seen the budgetary allocations for hydrological services systematically cut. National governments should take urgent measures, when appropriate, directed at reversing the growing decline of these networks and should increase support for operational hydrological and relevant meteorological observation networks. This is especially crucial in developing countries.

140. Understand and assess vulnerability. A better understanding of the impacts of global changes, including climate change and variability, on water resources and their availability and quality for multiple uses is necessary in order to prepare the required response strategies. Resources should be provided and efforts intensified to improve information and data collection at first and promote research regarding the potential impacts of climate variability and change on freshwater resources in river basins. Activities should include new investments in observations and measurements, capacity building, operation and maintenance of existing monitoring systems, including the redevelopment and upgrading of the existing hydrological networks.

141. Support from international organizations and development partners. The international development partner community should support comprehensive projects to improve data collection, including improvement of hydrological networks, data management and dissemination, which constitute the foundation of all IWRM processes. The United Nations, the World Bank and other international agencies and development partners should assist countries with comprehensive projects, in order to improve their data collection networks and build the knowledge and information bases that are needed to develop and manage water resources in a sustainable manner.

142. Include monitoring and assessment in data collection. Simple data collection is not enough and monitoring and assessing the data for trends is necessary for proper adaptation and mitigation measures of water-related problems, floods and droughts in particular. Urgent issues requiring an influx of data collection, monitoring and assessment include climate change, sanitation, access to water, water-related disasters, groundwater and the interface between groundwater and surface water. Assessment should be carried out at local, basin, regional, national and global levels and include a peer review process for performance for those who ascribe to the idea. Reliability, consistency and compatibility of data coming from different sources ought to be ensured.

143. Promote international and interstate data exchange and cooperation between countries. For a better understanding of the hydrological cycle under the changing climate, international data exchange should be encouraged. International and national policies should be reviewed and efforts needs to be directed in order to facilitate the international exchange of hydrological and related data and products, so that regional and global studies of freshwater resources and climate change and variability can be conducted and useful results produced for the benefit of mankind.

144. Strengthen the use of data in decision making. The role of the water manager is essential to water security in that it includes proposing a comprehensive range of options to meet the desired societal objectives and needs for water security. Data in the hands of water managers enhances their capacity to develop practical solutions. At the same time, decision makers should be sensitized to the importance of data so that quality data can influence policy decisions.

Data Standards

Data and information exchange between countries calls for standards. In Session 2.1.1 "Consistent Monitoring to Track Progress Towards the MDGs and Beyond", it was underlined that global monitoring is evolving, but there is still significant confusion between global and national figures. As emphasized in Session 6.4.1 "Data Needs and Data Acquisition", data collected by a number of different organizations or countries suffer from lack of comparability at the national, regional and global levels. Even if data is available and accessible, it is often in a format not easily understandable by all data users. Lack of exchange and collaboration between institutions may also result in differing figures for the same country and lead to confusion, just like in the case of Uganda (Session 2.1.1 "Consistent Monitoring to Track Progress towards the MDGs and Beyond"). Accordingly, IWG Article 142 recommends that *"reliability, consistency and compatibility of data coming from different sources ought to be ensured"* in data assessment. The need for data standardization is critical to obtain comparable and useful databases for effective water resources management. It also helps to determine where additional data collection is needed. However the use of common standards is not easy to achieve. It requires strong legal and institutional arrangements at national, regional and country levels as well as financial and human resources. It is also difficult to agree upon a common standard that satisfies all (Session 6.4.2 "Data Integration and Dissemination: From Data to Information").

Adopted in 2007 by the United Nations Statistical Commission as an international statistical standard, the System of Environmental Economic Accounting for Water (SEEAW) is an important part of the way forward. Providing standardized information, definitions, concepts and classifications on water accounting that can be used for international comparisons, SEEAW is already used by 33 countries and Session 6.4.2 "Data Integration and Dissemination: From Data to Information", the participants promoted its implementation in additional countries and its development to more fully integrate social data and water quality under the auspices of the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA).

TECHNOLOGY

Technological solutions discussed during the Forum can be divided into two categories: hydrological technologies (dams, irrigation systems, wastewater recycling and reuse, desalinization, rainwater harvesting, etc.) for better water resources management and water and sanitation services; and information and communication technologies (communication tools, computer software for modelling, monitoring equipment, etc.) for better data collection, dissemination, and analysis.

In Theme 6 Wrap-up & Synthesis Session, it was emphasized that the poten-

tial of new technologies for gathering, managing and transmitting data should be explored and embraced, while participants of Session 1.3.5 "Managing Disasters" Wrap-up & Synthesis Session discussed that conventional technologies and new technologies should be bridged, the development of new technology and the maintenance of existing technology are equally important and decision/policy makers should be informed of the benefits of new technologies.

Dissemination of Technology towards Global Solutions to Water Problems

The importance of research and technology for overcoming water-related problems were underlined in several sessions. As acknowledged in Istanbul Ministerial Statement Article 14, development and adoption of new technologies in the field of water is needed towards sustainable use and management of water resources. However, available technologies significantly differ between developed and developing countries due to economic reasons. Developing countries are often unable to afford generating technological innovations, which makes technology transfer from developed countries to developing countries crucial. This is still a challenge. As underlined in the Third UN World Water Development Report (The United Nations World Water Assessment Programme (UN-WWAP), 2009), "*impediments to the dissemination of technology must be overcome if developing countries are to benefit from innovations developed in richer countries*".

Istanbul Ministerial Statement Article 8 is about providing "*technological support and know-how*" for water investments in water-short areas to make them "*sustainable and affordable*", while Article 14 promotes "*international cooperation in the development, application and diffusion, including dissemination of technologies, practices and processes in water issues, as well as in scientific, technological, socio-economic and other research, towards improving universal access to water and sanitation*". One good example for international technology and know-how transfer is the Japan International Cooperation Agency (JICA), which shares Japan's experience and technologies with developing countries through organizing training courses. But in other countries, there is still incomplete technology transfer and more effort is needed to improve this Japanese approach as a good example. (Session 6.3.3 "No More Money Down the Drain: Should Investments Be Linked to Professional Associations' Backstopping?").

Technology for Information

Advances in science and technology are critical in addressing water-related problems, adapting to climate change and improving the efficiency and minimizing the overexploitation of water resources. However, today's technology not only provides advanced tools for data collection, storage and analysis. Modern information and communication technologies enable connectivity in the water sector and allow data, information and knowledge sharing between different stake-

holders around the world, as well as in developing countries where lots of innovations are taking place. As the cost of communication is dropping globally, more and more people in developing countries are becoming able to obtain mobile phones and have internet access to social networking and learning tools such as Facebook, Twitter, blogs, wikies etc. This should be seen as an opportunity for increasing connectivity in the water sector for information and knowledge sharing. Akvo, for example, has created the "Akvopedia"[3], the Wikipedia of the water sector, which is an open platform of knowledge sharing about low-cost, sustainable, maintainable, technical solutions, approaches (Session 6.2.1 "Thinking Outside the Water Box"). Internet and web-based social networking and learning tools are also means for education, creating awareness and fund raising.

Technology can also help tracking the progress towards the MDGs and accountability in the water sector. Innovative monitoring tools make it possible to follow the progress of water and sanitation projects in developing countries, as in the case of Africa Interactive, where local reporters use mobile phones to immediately publish their stories online on africanews.com and donors can monitor the implementation of the projects that they pay for (Session 6.2.1 "Thinking Outside the Water Box"). A project of similar transparency aim is carried out by France, which aims to make every information about water services and sanitation all across the country available online to make the users able to compare the provided services and hold the government more accountable (Session 4.3.2 "Keeping a Close Watch on Transparency and Accountability in the Water Sector").

Conclusion

Main recommendations:

- More financial resources should be put into data collection, integration and dissemination. The international donor community should assist countries where appropriate.
- In order to effectively meet the needs of different user groups and make the most effective use of financial resources, data should be demand-driven instead of supply-driven. Scientific research and data user communities should work in close collaboration on data collection in terms of identifying what and how to collect.
- Successful water management necessitates integrated water-related data for informed decision making. Hydrologists, economists and social scientists should cooperate to analyze and convert data into usable knowledge for decision makers combining hydrological data with relevant economic, social and environmental variables.
- Improved global water resources management necessitates exchange of data,

[3] http://www.akvo.org/wiki

information, know-how and experiences among institutions and stakeholders at national, regional and global levels. Regional data sharing is especially important in terms of disaster mitigation for neighbouring countries sharing the same water resources.

- There is a need for common data standards to overcome comparability problems between global and national data figures.
- New innovative technologies offer solutions to global water-related problems. Richer countries should assist developing countries to benefit from such innovations through technological support, know-how transfer and capacity building.
- Modern technologies enable connectivity, information sharing and transparency in the water sector and provide tools and platforms for education, awareness-building and fund raising.

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DISASTER MITIGATION AND MANAGEMENT

İdil YILMAZ

> We cannot prevent hazards, but we have a duty to prevent them from turning into disasters.
> *Michel Jarraud, UN World Meteorological Organization, Session 1.3.0*

Water-related disasters are globally on the increase (UN-WWAP, 2009). The world today is experiencing more frequent and more hazardous hydro-meteorological extremes, ranging from floods and droughts to tsunamis, landslides and cyclones. The UN statistics indicate that between 1999 and 2005, more than 3,300 floods and droughts were reported across the world, accounting for 64% of natural disasters and affecting half the world's population[1]. On any given year, water-related disasters account for 80 to 95% of all death and casualties worldwide [2]. Increasing risks due to climate change added to aggravated vulnerabilities of communities (as a result of environmental degradation, population growth, urbanization, migration and lack of adequate infrastructure, early warning systems or risk management plans), intensify the negative impacts of natural hazards. Disasters often induce tremendous tolls of human suffering, loss of life, economic damage and massive harm to vital infrastructure. Developing countries and people living in poverty suffer disproportionately and find it hardest to recover. There is a lot to be done to reduce the risks, even in the most developed countries. Losses triggered by recurrent water-related disasters pose major impediments to global poverty reduction, sustainable development and the achievement of the Millennium Development Goals. In spite of the recent international plans of action such as the Hyogo Framework for Action (HFA) (UN/ISDR, 2005), which is a global road-map that aims to significantly reduce disaster losses by 2015, the level of disaster risk reduction is still insufficient, while vulnerabilities of communities continue to grow.

The situation is likely to become even more severe in the future. As climate change is foreseen to bring about more frequent and more severe natural hazards, failing to achieve greater resilience will increase the toll. Now is the time for taking action. Instead of merely discussing the problem itself, it is time to create a new momentum towards stronger political commitment to increase global resilience against disasters. Occurrence of natural hazards cannot be prevented; their impacts however can be mitigated through effective disaster preparedness and management methods.

1 Chen Lei, Minister of Water Resources, China. Special Focus on Session on Risk Management of Water Infrastructure Projects Related to Mega Natural Disasters

2 Margareta Wahlström, Assistant Secretary-General, UN International Strategy for. Disaster Reduction (UNISDR). High Level Expert Panel on Water and Disasters

The issue of disaster mitigation and management was subject to fruitful discussions throughout the thematic and regional sessions of the 5th World Water Forum. Topic 1.3 "Managing Disasters" addressed how water-related disasters can be effectively managed through better use of available resources in a changing world. The discussions were mainly shaped around four key approaches:

- mobilizing coordinated action between government, science and civil society;
- mobilizing appropriate technologies to prevent and reduce losses;
- mobilizing a paradigm shift from reactive to proactive management approach;
- mobilizing combined potentials in emergency situations, especially in conflict affected environments.

Alongside the thematic sessions, the High Level Expert Panel on Water and Disaster, organized under the auspices of the UN Secretary General's Advisory Board on Water and Sanitation (UNSGAB), has provided significant contribution to the substance of the Forum. The Panel called for concrete and urgent political actions for global water-related disaster risk reduction and highlighted the importance of preventative measures, data sharing, local capacity building, and transboundary cooperation on preparedness and management of water resources. The Panel also launched the Water and Disaster Report which includes an Action Plan consisting of six clear-cut imperatives and forty concrete tasks to be taken at local, national, regional and global levels. In order to implement these urgent imperatives, the High Level Expert Panel suggested launching of three special crosscutting initiatives: sharing hydrological data as public goods; searching for ways to minimize the damages caused by the rising sea levels as a result of climate change; and facilitating studies by national and international hydrological research institutes on constructing infrastructures and improving legal and policy frameworks as well as developing human resources. Participating governments of the Forum's Ministerial Roundtable on Reducing the Impact of Water-Related Disasters also strongly supported the implementation of the Action Plan.

Climate change will impact every aspect of the water cycle, affecting our citizens: water scarcity will become more exacerbated, extreme events, such as floods and droughts, will increase, the sea level will rise, temperatures will increase, groundwater recharge, rainfall patterns and stream flow regimes will change.

Istanbul Water Consensus, Part I - Local and Regional Governments' Declaration and Call for Action

The Action Plan of UNSGAB's High Level Expert Panel on Water and Disaster provides Six Urgent Imperatives for UN agencies, regional bodies, national governments and local authorities to:

1) Galvanize and mobilize before the disaster strikes
2) Prioritize systems to forecast, inform, alert and evacuate
3) Incorporate disaster risk reduction and climate change adaptation as integral to development planning
4) Improve disaster response
5) Provide safe water and toilets quickly when disaster/conflict strikes
6) Employ special crosscutting initiatives to share hydro-climatic data at regional, national and local levels

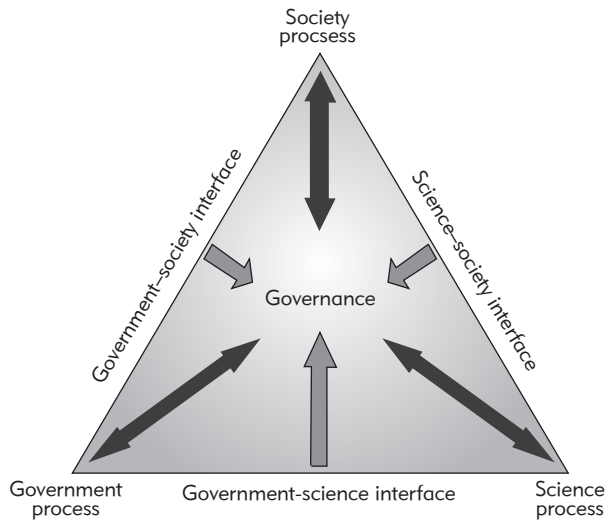
www.waterforum.jp/eng/HLEP/doc/Water_and_Disaster.pdf

Discussions on water-related disasters were further enriched by special focus-on sessions namely "Risk Management of Water Infrastructure Projects Related to Mega Natural Disasters" and "Management of Water-Related

Disasters in View of Climate Change". Asia-Pacific Regional Session specifically discussed the issue of disaster management in detail, being the most affected continent by water-related disasters. All these discussions commonly supported concrete and effective collaborative actions and incorporation of water-related Disaster Risk Reduction (DRR) into national development plans, recognizing adaptation to increasing risks from climate change as the "highest" priority issue, in parallel to the key message of the Hyogo Framework for Action (HFA) 2005-2015.

Government, Science and Civil Society in Trialogue for More Effective Actions

In the process of water-related disaster management, the worlds of government, science and civil society are too often isolated, decreasing the overall effectiveness of efforts to reduce risks. Integrated disaster management approach calls for a significant shift from the mere consultation of stakeholders to a science-based approach with the effective co-production of science, society and policy-makers in assessing risks, planning strategies and implementing solutions through dissemination of experiences and practical tools and instruments. The term "trialogue" represents cooperative actions of government officials, scientists and representatives of civil society. The government-science interface provides scientific basis for the decision-making process; the science-society interface creates public awareness about the risks and vulnerabilities; and the government-society interface determines the extent to which the government develops and implements solutions that fit in the context and capacities of the community, whereas the civil society can bring indigenous knowledge to build on existing capacities.



Trialogue scheme (image obtained from the introductory presentation of Session 1.3.1, convened by Royal Haskoning of the Netherlands with the participation of UN/ISDR, Cooperative

Programme on Water and Climate, and the Dutch Ministry of Transport, Public Works and Water Management).

An effective trialogue should start well before the disaster occurs and requires transparent and strong institutions, on-going conversations and a clearly defined set of roles and responsibilities. Governmental institutions, research institutes and civil society organizations should be strengthened through capacity building. Instead of top-down planning, a bottom-up approach should be adopted; for instance, the society should be involved in the trialogue through education, capacity building and stronger social networks that facilitate informing communities of their vulnerabilities and their role in taking measures to increase their resilience against the risks. The role of media is also critical in creating public-awareness, informing the society about latest scientific facts and studies. Science, civil society and the media together can raise the awareness of decision-makers and convince them to take actions and make appropriate risk-mitigation investments. Extreme events should be used as triggers for action and should be regarded as opportunities for maintaining awareness and commitment.

Language can be a barrier for effective trialogue. Good trialogue requires involved parties to practice a common language. Scientific knowledge should therefore be converted into a shared language for the society and the decision-makers to understand the issues and be aware of the risks. The national flood risk map of the Netherlands prepared with the aim of including the civil society in the process of effective disaster preparedness is a successful example in this regard. Moreover, in order to convert knowledge into practice, decision-makers should really understand the context, constraints and opportunities of their communities. Creating an "in-between" organization can therefore be meaningful to overcome such language and cultural barriers of the trialogue process.

"We have to reinforce the trialogue on international level because water does not stop at the borders."
Harry Keereweer, Royal Haskoning, Session 1.3.1.

Finally, a continuous trialogue should be reinforced also on the international level, for water does not stop at the borders. International collaboration and exchange of science-based knowledge and experience should be promoted to strengthen the capacity of governments. As discussed in the Ministerial Roundtable Report on Reducing the Impact of Water-Related Disasters, "*The science of climate needs to provide better climate information for the various user sectors to be able to incorporate such information in their decision-making process. Global cooperation and collaboration is essential to make available better climate information, early warnings, predictions and long-term projections available for common use*". A good example to cross-border collaboration on water disaster management is the Flood Information and Warning System (FLIWAS) established between the Netherlands and Germany, which is an internet-oriented application providing water managers, disaster management professionals and local government officials the right information at the right time, and advices on actions and measures to be taken during flood situations.

The Role of Science and Technology

From Reactive to Proactive Disaster Management

Disaster preparedness is becoming ever more critical under the current circumstances of global climate change and increasing frequency of water-related extremes. The impacts of water-related extreme events are largely determined by the vulnerability of communities that can be understood, managed and reduced. A shift from "reactive" to a science-based "proactive" approach is vital to reduce the adverse impacts of water-related disasters. Session 1.3.3 "Managing Water-Related Risks in Changing Climate" concluded that resources should be directed into taking proactive measures for preparedness, rather than concentrating on restoration and relief efforts. As Mr. Sha Zukang, United Nations Under-Secretary-General for Economic and Social Affairs, put it in the High Level Expert Panel on Water and Disaster, "*an ounce of prevention is worth a pound of cure*". Decision/policy makers should comprehend that the cost of taking measures is often many times lower than the cost of disasters. All countries should spare efforts in this regard and transboundary cooperation is critical. Istanbul Ministerial Statement Article 10 recognizes this concern by stating that "*We resolve to proceed, where possible, from crisis management to disaster preparedness and prevention of human-induced disasters and risk management by developing early warning systems, implementing structural and non-structural measures, both for water resources and access to water and sanitation, and building capacity at all levels*".

The climate is changing. It was repeatedly underlined in the thematic sessions that future hydro-meteorological extremes cannot be predicted on the basis of past events, for the future climate is highly uncertain and will not be a reflection of the past. Adaptation to climate change therefore requires robust and flexible strategies and policies that could be modified according to new science-based information and knowledge. These policies should sensibly combine both structural and non-structural measures. There is an urgent need for infrastructure improvement. Water-related infrastructure should urgently be designed and improved in the light of appropriate and relevant past data as well as projections of water-related extreme hazards.

Disasters result in greater damages in urban areas due to the sheer concentration of people and infrastructure. Urban populations living in poverty are the most vulnerable, due to lack of infrastructure, inappropriate land use and inadequate housing. While only 5% of on-going development in the world's expanding cities is really planned, it is crucial to understand urban vulnerability and pay more attention to integrating disaster mitigation strategies into urban development practices.

Early warning, forecasting and response systems are effective measures for proactive water-related disaster risk management. UN/ISDR Guidelines for Reducing Flood Losses (UN/ISDR, 2002) identifies that "*the operation of a flood warning and response system is the most effective method for reducing the risk of loss of life and economic losses*". For this purpose, it is important to make climate information available at the local levels where strategies to

adaptation to climate change and variability are implemented. In developing countries, there is lack of real time rainfall data and geographic data to build forecasting models, along with the lack of financial resources and human capacities. One possible solution to this is to use satellite-based global rainfall data, which is available free of charge on the internet, can be obtained with uniform temporal resolution and historical data is available from data archives. A good example to this is the Integrated Flood Analysis System (IFAS)[3], developed by the International Centre for Water Hazard and Risk Management (ICHARM) as a freely downloadable internet-based application for preparing flood forecasting and warning systems in poorly gauged basins. ICHARM plans to apply this user-friendly system to various basins jointly with local professionals through training seminars and co-operative studies and improve its functions based on local needs. There are also programmes and models developed by the financial aid of several UN organizations. One of the main ways of putting such technologies into wide practical use in each country is making them available online for free. The wide gap between satellite technology and local users should thereby be bridged.

Water-related Disaster Risk Reduction (DRR) is critically important for adaptation to climate change. As discussed in the "Ministerial Roundtable Report on Reducing the Impacts of Water-Related Disasters", policy frameworks for water-related disaster risk reduction should be developed within the context of Integrated Water Resources Management (IWRM), through strengthening comprehensive structural and non-structural measures. Similarly, IWG Article 25 recommends that risk reduction and mitigation strategies should be integrated into national development and financial plans with clear national and local goals and targets, recognizing adaptation to increasing risks from climate change as the highest priority issue. Adoption and implementation of proactive disaster management policies require appropriate science-based knowledge, institutional mechanism, financial resources and most of all close cooperation and collaboration at global, regional and national levels with the participation of all stakeholders and strong engagement of the public, which makes trialogue essential as discussed previously.

International collaboration is vital for enhancing national and regional skills to predict extreme events and mitigate their adverse impacts, especially in cases of transboundary risks (IWG, Article 25). Disaster risks can be reduced at the national level by establishing links between national disaster management agencies and international early warning systems such as the Global Disaster Alert and Coordination System (GDACS)[4]. A number of countries have the capacity to downscale global climate models to national or basin scale. However, this capacity is mostly lacking in developing countries. The Least Developed Countries (LDCs) and the Small Island Development States (SIDS) require the greatest support from the international community. Risks can also be reduced by ensuring the participation of disaster-prone countries and responding countries in international response networks such as the UN Disaster Assessment and Coordination Team

3 http://www.icharm.pwri.go.jp/ research/ifas/index.html

4 http://www.gdacs.org/

(UNDAC)[5], the International Search and Rescue Advisory Group (INSARAG)[6] and the environmental emergency networks.

Better climate information is critical for a safer future. There is an urgent need to strengthen the availability and access to climate information for water managers and other users. Initiatives to bridge the gap between information providers and users should be supported. Decision-makers should be provided with essential information in a timely manner with the help of appropriate technologies, especially during disaster response. Additionally, in Session 1.3.3 "Managing Water-Related Risks in Changing Climate" the establishment of a knowledge sharing platform, such as a "Flood Resilience Centre" was proposed, with the aim of helping countries develop resilience through sharing data, information, forecasts, technologies and expertise. Similarly, the Ministerial Roundtable Report on Reducing the Impacts of Water-Related Disasters highlights the global lack of information on drought issues and pointed at the urgency "*to mobilize resources for data promotion and collection in the area, namely through the creation of national, regional and international observatories*".

Wise Combination of Conventional and New Technologies

The role of science and technology is of great importance in the risk assessment, mitigation and preparedness stages of water-related disaster management. Session 1.3.2 "Technologies for Water-Related Disaster Management" promoted the wise combination of new technologies and indigenous knowledge to better manage water-related risk reduction and recommended that existing technologies should be optimized and appropriate new technologies should be developed to adapt to the growing disaster risks. Effectiveness of technologies, both new and conventional, is determined by their sustainability, accessibility and compatibility to the characteristics of the area they are applied, including topography, climate, as well as financial and human resources. Various technologies should therefore be properly combined taking into account such regional characteristics and available financial and human resources. Although cutting-edge technologies may seem attractive, locally inherited technologies may often be more suitable for the area after proven to be effective for generations. For example, in the Mekong River Basin, one of the greatest river basins in Asia, the traditional Japanese "soda mattress method" was used for riverbank protection instead of using high technology, which proved to be more effective for it was low-cost, easy to maintain, could be realized using existing materials and therefore was a suitable choice for a developing country like Lao PDR (Session 1.3.2 "Technologies for Water-Related Disaster Management)".

Incorporating proper technologies into domestic institutions and culture can greatly contribute to sustainable national development through minimizing economic and human loss. In order to make new technologies applied and

The MARE Project (Managing Adaptive REsponses to changing flood risk) was officially launched at the 5th World Water Forum, which aims to enable widespread implementation of local adaptive measures that mitigate flood risk through setting up Learning and Action Alliances in the Netherlands, England, Germany and Norway. More information is available at: www.mare-project.eu.

5 http://ochaonline.un.org/Default.aspx?tabid =1414

6 http://ochaonline.un.org/Coordination/FieldCoordinationSupportSection/INSARAG/tabid/1436/language/en-US/Default.aspx

rooted effectively in each country, it is important to generate a local industry, mobilize the funds and create trained and educated local leaders to transfer appropriate technologies. Towards this end, international institutions such as the United Nations Environmental Programme (UNEP), Japan International Cooperation Agency (JICA) and the International Centre for Water Hazard (ICHARM) are doing local capacity building projects in various countries and coordinating training courses for creating local leaderships to apply new technologies. The benefit and cost-effectiveness of new technologies should be demonstrated to decision/policy makers. Advanced technologies can be truly effective for vulnerability reduction and preparedness only when communities are educated through proper capacity building and technology-supported disaster prevention becomes a part of the community's culture. When involving local people, a language understandable to local people should be used. Instead of introducing totally new models, existing local technologies should be integrated with the new technologies, since ownership by the end-users is critical. Local and indigenous knowledge on disaster management should be handed down to the next generations for sustainable technologies are the ones that incorporate local institutional expertise.

The Case of Disaster Hit/Armed Conflict Areas

Preparedness to cope effectively with water-related disasters can only be reached under stable political conditions. However, many areas in the world are suffering from armed conflict and occupation, while they are also subject to periodic natural hazards. Bearing such double-adversity, these communities therefore face specific challenges in disaster preparedness and response. When a natural disaster coincides with an armed conflict, its impact becomes more destructive. Long-term conflict situations indirectly bring about an impoverishment to communities, weaken local institutions, diminish institutional capacity and lead to an overall reduction in the local resilience to natural disasters. Ill-equipped to respond to disasters and overcome the impacts, these communities are very much in need of humanitarian assistance.

Session 1.3.4 "Water Management during and after Disasters/Conflicts" discussed the ways to improve the combined efforts of local governments, donors, utilities and other involved organizations to optimize disaster response and move from emergency to normalisation in conflict-ridden environments. The session advocated the importance of improving the capacities of water utilities, local governments, donors, and helping organizations, enhancing their combined potential for disaster preparedness and response, and invited them to develop alternative approaches to reach normalisation of services. Considering that these different actors may have different visions/agendas, adoption of overriding agendas should be promoted. Atomization of the interests of these different actors can be overcome through optimized coordination.

The level of local emergency response was another critical point that was emphasized during the thematic discussions. Although the contribution of humanitarian assistance from the international community and donations

are indisputable, money alone is not a remedy, particularly in times of emergency and as experienced in the Indian Ocean tsunami event in 2004, most effective responses come from organizations and institutions on the ground. Community-based response is timelier and thus more effective. Strengthening the coordination and response capacities of local institutions is therefore of vital importance.

Among the reconstruction measures, securing the access to safe drinking water and sanitation was identified as the most urgent and important issue for communities during and after disasters. This same issue was also highlighted in the Action Plan of the High-Level Expert Panel on Water and Disaster/UNSGAB (HLEP, 2009) and in IWG Article 28, which also promotes humanitarian response to be *"granted aiming at re-establishing or upgrading drinking water and sanitation installations and supplies disrupted by the disasters or the direct or indirect effects of armed conflict and/or occupation"*. Maintaining key water infrastructures and appropriate living environmental conditions during and after disasters and/or conflicts was another hot spot. Destruction of water supplies can be deadlier than weapons themselves and therefore is a war crime, killing people from thirst and hunger and forcing them to leave their lands. IWG Article 28 advocates that "*all parties to the conflict must respect International Humanitarian Law protecting objects that are indispensable to the survival of civilian population, such as drinking water installations and supplies and irrigation works*". Similarly, Parliamentarians for Water Statement Article 3 calls on "*parliamentarians to ask their governments not to target water resources and infrastructure in times of conflict*".

Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977

Article 54. Protection of objects indispensable to the survival of the civilian population

Paragraph 2. It is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party.

Paragraph 3. The prohibitions in paragraph 2 shall not apply to such of the objects covered by it as are used by an adverse Party:

(b) - If not as sustenance, then in direct support of military action, provided, however, that in no event shall actions against these objects be taken which may be expected to leave the civilian population with such inadequate food or water as to cause its starvation or force its movement.

The participants of Session 1.3.4 also strictly recommended taking water issues out of the conflict dynamics and politics. "*We need access to water, access to personnel and access to materials and equipment. We need to remove water issues out of politics to be dealt with as humanitarian aspects*" said Mr. Rebhy El Sheikh of the Palestinian Water Authority (PWA), pointing at the Israeli control over the transboundary water resources in Gaza and the West Bank. It was addressed during the discussions that the West Bank today almost completely depends on the Israeli supplier company for domestic water supply, has very poor access to water and sanitation services and needed materials to provide these services are not allowed in by the Israeli side. In spite of all these difficulties, PWA managed to find solutions in emergency assistance through assistance by international partners like UNICEF and others. Humanitarian aid during emergency situations in conflict-ridden environments is therefore of vital importance to meet the vital needs of the affected people, including water supply, sanitation and hygiene promotion. The International Humanitarian Law Additional Protocol II Article 18 imposes parties to the conflict "*to facilitate rapid and unimpeded passage of independent humanitarian relief for civilians in need*". However, access and safety of the delivery of humanitarian aids amidst conflict is very often an issue. The World Bank-supported Northern Gaza Emergency Sewage Treatment Project (NGEST), for example, which is the only infrastructure project ongoing in the area since more than three years, had to hurdle various obstacles during its implementation such as restrictions on the entry of goods and materials and restricted access to the site. PWA also called for donor organizations to be pragmatic, flexible and strongly committed, pointing at the fact that affected communities are in need of development assistance for consolidation and rehabilitation activities just as much as they need aid for emergency situations. It was highlighted during the discussions that as the situation evolves from emergency to reconstructions, too often there occurs a gap in institutional funding and countries may not receive substantial development aid compared to humanitarian assistance.

Conclusion

The discussions on reducing the impacts of water-related disasters were shaped around three major subjects: prevention/preparedness, effective response, and recovery - particularly in conflict-ridden environments. The following are the key recommendations derived from the thematic sessions and political outcomes.

On preparedness and response:

- Action should be taken before the disaster strikes.
- Water-related Disaster Risk Reduction (DRR) needs to be integrated into national development and financial plans and adaptation to increasing risks from climate change should be recognized as the "highest" priority issue.

- A shift from "re-active" to "pro-active" approach is the key to manage water-related disaster risks in the highly changing climate of uncertainties. Resources should be directed into prevention and preparedness measures, rather than concentrating on restoration and relief efforts.
- A science-based integrated approach is crucial for effective disaster risk reduction. Decision-makers, scientist/academia and civil society should work cooperatively and share knowledge and experiences in a three-way "trialogue" in order to assess the risks, strategies and solutions. Governmental organizations, knowledge institutes and the civil society should be strengthened through capacity building.
- The society should be informed of the risks and their role in decreasing their vulnerabilities through awareness raising and education.
- The operation of latest forecasting technologies and early warning systems is crucial for mitigating the adverse impacts of disasters. International collaboration and exchange of science-based knowledge and experience is vital. The gap between the developed and developing countries in terms of technology, data, finances and human resources can be narrowed through making satellite data, models and software available online for free.
- Water-related data and information is essential for modelling, forecasting and early warning systems, which allow for informed decision-making. Resources should be mobilized for data promotion and collection through the establishment of national, regional and international observatories.
- Robust and flexible strategies and policies that should sensibly combine both structural and non-structural measures should be adopted.
- New and locally inherited technologies should be sensibly combined, taking local characteristics and available financial and human resources into account.

On recovery (particularly in conflict-ridden environments):

- The combined potential of water utilities, local governments, donors and helping organizations for disaster preparedness and response should be enhanced through optimized coordination.
- Community-based response has proved to be timelier and more effective. The coordination and response capacities of local institutions should therefore be strengthened.
- Access to safe drinking water and sanitation should be secured during and after disasters and/or conflicts. Safe water and toilets should quickly be provided when disaster/conflict strikes.

- Key water infrastructures and appropriate living environmental conditions should be maintained during and after disasters.

All the above thematic recommendations were generally covered by the political outcomes of the Forum, namely the Istanbul Declaration of Heads of States on Water, Istanbul Ministerial Statement, Istanbul Water Guide, Ministerial Roundtable Report on Reducing the Impacts of Water-Related Disasters, Parliamentarians for Water Statement and Istanbul Water Consensus.

Comments/Findings:

- There was a distinction between floods and droughts in the discussions of the Ministerial Roundtable on Reducing the Impacts of Water-Related Disasters, whereas recommendations in the thematic discussions evaluated water-related disasters as a whole.
- Discussions on the case of disaster-hit/armed conflict areas failed to touch upon the potential of water-related disasters in peacemaking and conflict resolution through yielding cooperation between rival states.
- The Thematic recommendations on disaster mitigration and management were sufficiently addressed in the Political Process.

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TRANSBOUNDARY COOPERATION

Ipek ERZI

Cooperation is the keyword in dealing with transboundary water issues. Countries that benefit from the same water resources share the same geography and have common history; therefore, the potential for cooperation is not only based on natural circumstances but can also be deeply rooted in the past. Cooperation is the only way through which stakeholders reap the utmost benefits from water sources. Cooperation, in turn, can only be achieved through sound dialogue.

Transboundary cooperation was an issue that garnered attention in all three processes of the 5th World Water Forum. It was discussed by the ministers and parliamentarians in the Political Process. The Regional Process sessions showed that transboundary cooperation is not only a theme for discussion but also a sore point that could render objectivity of the parties involved obsolete. The Thematic Process of the Forum had a whole topic titled "Basin Management and Transboundary Cooperation" coordinated by the United Nations Educational Scientific and Cultural Organization (UNESCO) and the International Network of Basin Organizations (INBO).

Thematic Approach

The thematic topic was organized into four sessions. Not only were all these sessions standing-room-only, but the continuously vivid discussions were surpassed by no other session in the Forum. The organizers indicated in the wrap-up session that this topic received the highest number of applications during the preparation process. The discussions were moderated to focus on finding solutions, instead of placing blame. Even though parties sometimes got carried away trying to make their voices heard, one must remember that many people impulsively take a defensive stand believing that the difficulties they face are being disregarded. It should be noted that even during the regional sessions that discussed exploitation of transboundary waters as an important issue, the subject was approached with utmost care. It is imperative to keep in mind that effective dialogue is the only way to achieve cooperation over transboundary water sources.

The four sessions of the Thematic Process that covered "hydrosolidarity", "stakeholder involvement", "sustainable and equitable cooperation", and "operational tools" are indicative of the solution-finding approach employed by the organizers. Including the wrap-up session, a total of 16 hours were dedicated to discuss this thematic topic, "Basin Management and Transboundary Cooperation", in the Forum schedule.

Thematic Sessions on Transboundary Cooperation

Topic 3.1: Basin Management and Transboundary Cooperation

Session 3.1.1: Boundless Basins: What are the Successes and Failures of Hydrosolidarity?

Session 3.1.2: How can Stakeholders be Involved in Basin Management and Transboundary Water Cooperation?

Session 3.1.3: How can Cooperation Over Transboundary Surface and Groundwater Resources be Achieved in a Sustainable and Equitable Manner?

Session 3.1.4: Which are the Operational Tools that Allow Achieving Transboundary Cooperation and Sound Basin Management to be Achieved?

Session 3.1.5: Wrap-up and Synthesis: How can We Bridge the Divide Between Various Users Whose Lives Depend on Common Water Resources? And How Should We Just Do It?

– Is "Hydrosolidarity" a Useful Tool or a Fancy Word?

Hydrosolidarity, the topic of the first session in the transboundary series, was presented as a concept that is being promoted to replace hydrosovereignty. The discussion in the hydrosolidarity session was built on case studies, citing its benefits. The backbone of hydrosolidarity was defined as benefit-sharing which could be in the form of transfer of water-related products, international transfer of water, or upstream/downstream allocation. The case studies showed that where national sovereignty is not concerned, it might be easier to implement water management plans based on hydrosolidarity as illustrated by the intervention of French Water Agencies[1]. However, on border crossing scale, the intervention from the League of Arab States[2] clearly demonstrated both the need for cooperation and the potential for failure in forming solidarity between riparian states due to history and power asymmetry.

– Stakeholder Involvement

Enabling stakeholder involvement requires structure (institutionalization) that can only be achieved through good governance. Stakeholders within the realm

1 "French Water Agencies: Lessons Learned from 40 Years of Practicing Solidarity around Basin Water Sources" delivered by Jean-Marc Fragnoud, Deputy President of the Rhone Mediterranean and Corsica Basin Committee.

2 "Institutional and Legal Issues in Managing Shared Water Resources. The Arab Region's Experience" delivered by Chara Ksia, League of Arab States.

of transboundary waters include agencies, institutions and organizations within the river basin. However, there was some discussion in the second session of this Thematic Topic as to whether stakeholder representation should not be limited with geography but should also consider other interests. The example of UNESCO was given as an external stakeholder that can be a catalyst for reaching agreements.

River Basin Organizations (RBOs) were presented as tools that enable stakeholder involvement in transboundary cooperation. Direct citizen representation, however, was not deemed necessary for basin organizations since governments were assumed to represent the interests of civil society.

1. For international transboundary river basins promotion of stakeholders' participation should first focus on soliciting political will to ensure commitment and ownership in basin management cooperation to provide premises for effective cooperation in basin management.
2. Promotion of stakeholder participation must be goal oriented and result-based so as to create opportunities for effective contribution to formulating policy formulation and policies for their implementation.
3. Efforts need to be made to promote models and tools for participation to enhance mutual understanding amongst stakeholders and especially amongst stakeholders at different levels of involvement in the decision making process. Among the models that participants expressed their firm support for are basin or catchment management organizations.

Siva Thampi, UN Economic and Social Commision for Asia and the Pacific, Rapporteur for Session 3.1.2 *"How can Stakeholders be Involved in Basin Management and Transboundary Water Cooperation?"*

– Sustainable and Equitable Cooperation

Session 3.1.3 was on the tools and mechanisms that can be used to achieve sustainable and equitable transboundary cooperation based on water management at basin level. This subject proved to be one that was best discussed by law makers among all stakeholders. 1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses has already been widely discussed outside the Forum. However, within the Thematic Process of the Forum, the 1997 UN Convention was not discussed and there seemed to be a general agreement by the panellists and invited speakers that it must be ratified. The fact remains that only 22 countries have ratified the Convention as of April 2009, indicating major problems with its implementation; whereas, practitioners on the field seemed to believe that it was the route for transboundary cooperation. It was suggested that the Forum was qualified to recommend to the UN Secretary-General that an interim body for promoting the ratification of the 1997 UN Convention be founded.

Audience intervention was limited in this session due to time constraints. Even though it was well known in advance that transboundary cooperation was proving to be a popular topic, neither time nor venue allocation had been adequately

done. That being said, limited audience intervention showed that various stakeholders had reservations on the 1997 UN Convention. One specific question was whether the ratification of the 1997 UN Convention could overcome power asymmetry. Seven of the 22 countries that ratified the Convention are members of the Arab League, which underlines in every chance the fact that 65 % of its water comes from non-Arab countries and draws attention to the imbalance of power between upstream and downstream countries. The fact remains that the 1997 UN Convention is not binding and offers little concrete guidance.

Unfortunately, these reservations were not sufficiently addressed by the panellists and invited speakers.

1. Sustainable cooperation could be achieved through:
   - conjunctive management of surface and groundwater
   - in a river/lake basin;
2. Management to integrate:
   - use/utilization of waters;
   - protection of waters;
   - preservation, protection, improvement of aquatic ecosystem(s);
   - protection form detrimental effects from waters, including climate change effects;
3. Cooperation to be based on (or lead to conclusion of) (binding) international water treaties based on universally accepted international law principles (e.g.: duty to cooperate, states sovereignty, state integrity, peaceful dispute solutions, etc);
4. Water treaties to be negotiated, signed and ratified by river basin/lake countries on the basis of widely accepted principles of international water law (e.g. equitable utilization, avoiding significant harm)
5. River basin, riparian, lake littoral water treaties to be in accord with the broader-scope international water/environmental treaties/instruments (regional, global; (e.g. UNECE Water Convention, WFD);
6. UN Convention on International Watercourses (N.Y.C.'97) should be very strongly recommended for ratification (at least to the countries signatories);
7. Recommendation to the UN Secretary General:
   - to analyze status and process of N.Y.C.'97 ratification;
   - to undertake measures aimed at its ratification;
   - if he finds it appropriate, to establish an interim body which would be responsible for promotion of ratification;
8. The issue of transposition of international treaties into national legal systems of its parties and compliance with international water treaties should be specifically dealt with by scientific community;
9. Water treaties to be tools for establishment of joint institutions/arrangements for its implementation (e.g. river/lake basin commission);

Prof. Slavko Bogdanovic, LL.D., University of Novi Sad, Rapporteur for Session 3.1.3 *"How can cooperation over transboundary surface and groundwater resources be achieved in a sustainable and equitable manner?"*

– Operational Tools

As discussed in Session 3.1.4 "Which are the Operational Tools that Allow Achieving Transboundary Cooperation and Sound Basin Management to be Achieved?", the basic operational tool in water management is undoubtedly Integrated Water Resources Management (IWRM). Discussions on IWRM were not limited to a single specific topic in the Forum; the subject was also treated under various themes of the Thematic Process, as well as, in the Political and Regional Processes. The discussions indicated that although IWRM's significance as an operational tool seemed indisputable, proper mechanisms for its implementation are still lacking both in national and international context.

IWRM has been defined as "a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" by the *Technical Committee of the Global Water Partnership.*

Legislation to govern water sources is generally fragmented. While IWRM calls for an integrated approach between different subsectors of water, not to mention the involvement of other stakeholders, separate legislation exists for domestic, industrial, agricultural and hydropower uses of water. Fragmented legislation also leads to fragmented governance, thus the rationale for IWRM.

The panellists and speakers of this particular session pointed out that IWRM at river basin level is a highly discussed topic; whereas, aquifers tend to be disregarded because they are not on the surface. It followed that there is a lack of experience regarding groundwater and transboundary cooperation and that aquifers had not been sufficiently addressed in the 1997 UN Convention.

It was also suggested that political will and funding are crucial on a long term basis to sustain transboundary cooperation. Official Development Assistance (ODA) and other financial mechanisms were offered as funding tools.

The discussion on transboundary cooperation was not limited to the Thematic, Political and Regional processes. There were also substantial side events contributing to the Basin Management and Transboundary Cooperation theme, namely, "EU China Dialogue on Integrated River Basins" and the "Po Valley Compares Itself with Big International Basins".

World Water Day 2009 and Regional Priorities

The theme of the World Water Day 2009 was transboundary waters. In his opening speech, András Szöllösi-Nagy, as representative of the Director General of UNESCO, warned that with decrease in per capita availability of water, number of conflicts will increase, and added that water does not divide, it unifies. He listed financing options and organizational incompetence among the hurdles to benefit sharing. Mr. Szöllösi-Nagy's remarks on third party intervention for transboundary cooperation were that the hegemonic powers' insistence on achieving cooperation through bilateral negotiations was losing ground and the importance of a catalyst third party was being appreciated. This line of thought; on the other hand, did not reflect the strong sentiment in some of the interventions during the Forum. Third party intervention should not be considered as a readily available tool for transboundary cooperation. External involvement can be counterproductive from outside riparian states.

The second keynote speaker on World Water Day 2009, Commissioner Rho-

da Peace Tumusiime from the African Utility Commission reiterated that Africa wants move forward consciously and has plans but is lacking in funding. Complementary to the Commissioner's remarks, Africa's plans had been extensively discussed during the African Regional Session. The key African message to Istanbul was stated as "delivery on the commitments". The matrix of Short Term Regional Actions to Operationalise Commitments as given in the African Regional Paper (AMCOW, African Development Bank Group, 2009) includes facilitating transboundary infrastructure development through the strengthening of River Basin Organizations. A major expansion of Africa's infrastructure is seen as the keystone to deliver on commitments, including MDGs, and a major scaling up of finance is therefore deemed to be required.

The World Water Day included a roundtable discussion that featured Shaddad Atilli, President of the Palestinian Water Authority, who simply put that he was not managing water resources, he was managing a crisis and called on the Forum participants to keep water out of political dynamics. Along with other interventions during various thematic sessions of the Forum, the MENA and Arab Countries Regional Document (Arab Water Council, 2009) had a whole chapter devoted to "Bridging the Divide between Arab States and their Neighbouring Countries".

"A lot of people have become frustrated about high-level conferences and summits that produce declarations that are not either concrete enough or not followed up with actions. But we can't afford to become cynical. The fact is that it's going to take a lot of little steps to reach big goals. World Water Day events, the World Water Forum and political processes that lead to the ministerial statements and declarations may not satisfy everyone, but by raising public awareness, they slowly help build the political will within governments that is required to translate commitments into action."
Léna Salamé, Project Coordinator for the UNESCO Programme from Potential Conflict to Cooperation

Political Will

The importance of political will to overcome obstacles in the path of transboundary cooperation has been often cited during the thematic sessions of the Forum. It would follow that the outcomes of the Political Process provide substantial support for cooperation on transboundary watercourses.

The outcome documents of the Forum's Political Process were Istanbul Declaration of Heads of States on Water of the Heads of State Summit, Parliamentarians for Water Statement of the Parliamentarian Process, Istanbul Ministerial Statement and Istanbul Water Guide of the Ministerial Process, and Istanbul Water Consensus of the Local Authorities Process (World Water Council; 5th World Water Secretariat; Turkish Ministry of Foreign Affairs, 2009).

Transboundary cooperation was discussed in all parts of the Political Process except the local authorities. Istanbul Declaration of Heads of States on Water mentions "political will to take rapid action" based on solidarity, security, adaptability and useful dialogue and cooperation on transboundary waters between neighbours. The Ministerial Statement pledges to take "concrete and tangible steps to improve and promote cooperation on sustainable use and protection of transboundary water resources through coordinated action of riparian states". The Parliamentarians for Water Statement calls "to work on the issues of transboundary waters to avoid any conflict by establishing rules and guidelines".

Istanbul Water Guide (IWG) was created as a guide for action. It mirrors the structure of the Thematic Process, but not necessarily the actual content. IWG recognizes that "There is also currently a weakness of legal, political and institutional infrastructure that is capable of dealing with the international complexities of transboundary water resources which are related to issues such as national

sovereignty, security, water rights, population, economy, culture and ecosystems" (IWG Art. 57), a sentiment that was also reflected throughout the "Basin Management and Transboundary Cooperation" session series. There has been no direct reference to specific international norms related to transboundary waters in the Political Process; however, the IWG suggests that "the riparian states cooperate in line with internationally agreed principles" (IWG Art. 58) and that the legal and institutional framework of transboundary waters should be improved (IWG Art. 59). The rapporteur of Session 3.1.3 "How can Cooperation Over Transboundary Surface and Groundwater Resources be Achieved in a Sustainable and Equitable Manner?" had concluded that transboundary cooperation should be based on universally accepted international law principles.

The IWG indicates that River Basin Organisations (RBOs) "promote cooperation, mutual understanding and confidence building, […]" (IWG Art. 60). RBOs were strongly supported in Session 3.1.2 "How can Stakeholders be Involved in Basin Management and Transboundary Water Cooperation? " as tools that enable stakeholder involvement which in turn was deemed important by the Political Process because it ensures a participatory process and can reduce the risk of future disputes (IWG Art. 64).

Water management instead of water utilization was an inherent part of both processes; although not specifically discussed in the thematic sessions as in the Political Process. IWG Art. 62 calls on the riparian states to harmonize both their water supply and water demand management plans; whereas, Art. 63 directly calls for IWRM implementation. In Session 3.1.4 "Which are the Operational Tools that Allow Achieving Transboundary Cooperation and Sound Basin Management to be Achieved?", IWRM was the operational tool discussed.

Cross border monitoring and data exchange (IWG Art. 65), sharing of infrastructure and its finance (IWG Art. 66), and research, education and training (IWG Art.67) were not specifically discussed in the thematic sessions.

Conclusion

The significance of the 1997 UN Convention, which has not been sufficiently discussed within the Forum, is subject to different interpretations. First of all, it does not provide much guidance and it is not binding. Then again, another opinion is that actual international conduct now follows the principles of the Convention. It should also be noted that transboundary waters can be so site specific that generic solutions might not be applicable. During the Thematic Process, there has not been any discussion as to why the 1997 UN Convention has not been ratified, what it is that is holding it back, whether it can be implemented or not. The supporters of the Convention must be prepared to take an objective stance so that they can figure out what it is that hinders its universal acceptance. The Political Process recognized the weakness in the legal, political and institutional infrastructure and supported cooperation between riparian states based on internationally agreed principles.

IWRM was supported as a tool for water management in the Political Process and the Thematic Process; although its successful implementation is highly

questionable with fragmented water legislation. River Basin Organisations were presented as tools for cooperation based on mutual understanding and trust between riparian states.

Good will and mutual trust are preconditions for transboundary cooperation. However, no amount of good will or international trust building efforts can make up for distrust rooted in shared history or born through contemporary politics. Solutions to transboundary cooperation problems lie in a good understanding of history, as well as, respective national priorities. In that sense, third parties should realize that uninvited intervention will only pay lip service to cooperation efforts. Beneficiaries will seldom agree if their opinions are not solicited and will seldom accept advice they did not request.

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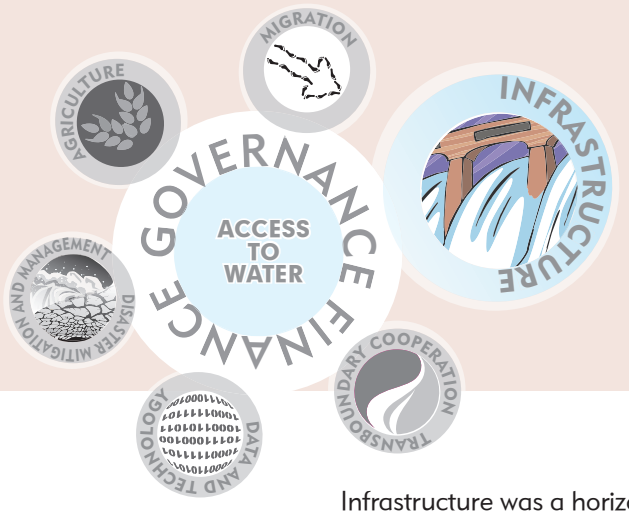

INFRASTRUCTURE

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Infrastructure was a horizontal topic that was discussed in many sessions, mainly in relation to the potential impact of climate change on infrastructure. The Perspective Document that was prepared by the International Union for Conservation of Nature (IUCN), Cooperative Programme on Water and Climate (CPWC), International Water Association (IWA) and the World Water Council (WWC) for the 5th World Water Forum outline important climate change adaptation strategies in order to "increase preparedness and/or enable coping mechanisms" and "soft and hard" infrastructure was highlighted as having a great importance for the environment and economic and social life (Smith & Barchiesi, 2009).

The importance of working together with the local people was emphasized during the wrap-up sessions of the 5th World Water Forum. The examples used included educating people in order to make them better understand the existing designs of infrastructure (natural infrastructure) and to build new technologies to overcome uncertainties.

Discussion on infrastructure can be grouped as

- Infrastructure for adaptation to climate change
- Existing versus new infrastructure
- Investing in infrastructure
- Infrastructure financing

Infrastructure for adaptation to climate change

Water level rise and droughts in some parts of the world have shown the need for adaptive management. *Perspectives on Water and Climate Change Adaptation: Environment as Infrastructure-Resilience to Climate Change Impacts on Water through investments in nature'* argues that reducing the vulnerabilities to climate change depends on planning and management strategies. As it was discussed in different cases, the frequent problems were "poverty, lack of food and water security" and those areas were "less able to cope" with climate change (Smith & Barchiesi, 2009). On that note, the Istanbul Water Guide under Theme III Article

70 mentions the lack of storage for groundwater and surface water "putting at risk the populations that depend on water for irrigation as well as protecting them from floods." This is an example where climate adaptation demands intersect with the need for new infrastructure investment.

According to the reports that addressed climate change adaptation and particularly the session on "Local Actions – Thinking beyond the water box: What adaptation to global and climate change?"[1], hot spots such as the ones recognized by United Nations Framework Convention for Climate Change (UNFCCC) (deltas, mountains, groundwaters, small islands and developing countries) are the areas most likely to be impacted by climate change. Hence action for adaptation to climate change is required to be taken by all the stakeholders that are involved.

Better management of waterbodies to reduce the impacts of climate change was discussed in detail in Theme 1 Global Changes and Risk Management. Besides methods of achieving better management, discussions have turned to the local authorities to develop and maintain water infrastructures. In Session 1.2.2 in the Overloaded Infrastructure Panel, Görer Tamer from Gazi University emphasized the threat of surface water that is being polluted while 70 % of it is being used in megacities.

Upgrading design criteria for hydraulic structures has been presented by Lee in the Session 1.3.3 Managing Water Related Risks in a Changing Climate. The effects of climate change brings the "change of design in infrastructure for water related disasters" and to be prepared and to prevent it from happening existing structures must be reinforced and national plans are required. However, infrastructure was not considered as the only answer: new types of insurance such as Official Development Assistance (ODA) were supported for reducing the negative impacts of water issues. Infrastructure can be a preventive measure for managing disasters.

"Water related infrastructure particularly to reduce the impact of water related extremes would require to be designed under these changing scenarios where the future is not necessarily going to be a reflection of the past."

Joachim Saalmüller, World Meterological Organization

Existing vs. New Infrastructure

The Istanbul Ministerial Statement Article 4 mentions that "We will work to build new and maintain, strengthen and improve existing infrastructure for multiple purposes including water storage, irrigation, energy production, navigation and disaster prevention and preparedness that are economically sound, environmentally sustainable and socially equitable." It continues to explain in Article 8 that "Respect the international law providing protection for water resources, water infrastructure and the environment in times of armed conflict and cooperate in its further development, as necessary." Protection of both natural and man-made existing infrastructure was part of the political outcomes of the Forum.

1 Session was convened by International Union for Conservation of Nature (IUCN), World Wildlife Fund (WWF), International Commission on Irrigation and Drainage (ICID), International Water Association (IWA), Global Environment Facility (GEF)

Investing in Infrastructure

Infrastructure investments are needed in many countries but to strengthen and benefit from these investments, there needs to be capacity building and institutional development (UNESCO-WWAP, 2009). President of African Ministerial Conference On Water (AMCOW), Bruno Jean Richard Itoua, highlighted the example of the Infrastructure Consortium for Africa (ICA) that "total ICA commitments to the water sector increased from US$1.8 billion in 2006 to US$2.9 billion in 2007, an increase of 60%" in the Africa Regional Document (AMCOW, African Development Bank Group, 2009), During the Africa Regional Day, Erastus Mwencha, Deputy Chairperson of the African Union, reminded that the 4th Assessment Report of Intergovernmental Panel on Climate Change (IPCC) stated the most vulnerable areas to the climate change that will "aggravate the water stress". Africa Region was the most vulnerable continent with lack of infrastructure for water supply and sanitation. Financial requirements were estimated as "US$50 billion per year over the next twenty years, more than double previous estimates due to the inclusion of water resource infrastructure" in the Africa Regional Document (AMCOW, African Development Bank Group, 2009).

On the other hand, in the High Level Panel on Adaptation to Climate Charge, William Cosgrove argued by that "every wealthy country setting up development aid by putting 7% of their domestic product to combat financial crises, should also dedicate 0.7% of that to developing countries to help them develop their infrastructure and create jobs their countries". In session 1.2.1 Rural to Rural Migration, Prof. Pieter van der Zaag from UNESCO-IHE also discussed the "high consuming countries' moral obligation to help local people to invest in water infrastructure and to use water more productively".

The Istanbul Ministerial Statement Article 9 states that "Investment efforts to establish necessary infrastructure, to increase storage and drainage capacity in particular, needs to be scaled up, taking into account water efficiency."

Infrastructure Financing

The need for new and improved infrastructure was a key message throughout the Forum and was widely seen as one of the central concerns of water resources management.

Lack of financing has been the main issue of discussions. As mentioned in the Third World Water Development Report as the "main obstacle" for "small-scale water providers", options to improve water infrastructure financing has been sought. Access to financing such as by microfinance schemes, local development, infrastructure banks and projects has been shown as cases around the world (UNESCO-WWAP, 2009). Most of the case studies did not discuss how to finance water infrastructure but instead the focus was on "investing natural infrastructure" by adaptive management and strengthening institutions. The Perspective Document "Environment as an Infrastructure" considered "Investments that are being done for engineered infrastructure are proposed to reconsider again. It has criticized the policymakers and suggests investing in natural infrastructure, strategies and learning (Smith & Barchiesi, 2009). Climate change was seen as

a big catalyst for improving water resource management. However, discussions of "how to gather information needed for management strategies and who is going to finance it" remained to be a question to be answered during the 5th World Water Forum.

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FINANCING AND GOVERNANCE

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Finance, Governance and the World Water Forum

The Thematic part of the Forum programme evolved around six themes that included "Finance" and "Governance and Management" as two separate Thematic Areas. The bankability of water projects, pricing and pro-poor strategies were discussed under the "Finance" Theme; whereas, access to water and sanitation, institutional and regulatory issues, ethics, transparency, accountability, stakeholder involvement and most importantly, public-private partnership (PPP) sessions were held under "Governance and Management". Forum records show that a respectable number of sessions in both Themes were simply repetitions of each other by the same people addressing the same audience, especially in the PPP and pricing strategies sessions. Therefore, in order to reflect the discussions on the floor instead of the mirroring the pre-arranged programme, financing and governance are discussed together in this chapter.

Themes of the 5th World Water Forum:

- Global Changes and Risk Management
- Advancing Human Development and the MDGs
- Managing and Protecting Water Resources and their Supply Systems
- Governance and Management
- Finance
- Education, Knowledge and Capacity Development

The Camdessuss Panel (2003) focused on the supply side of financing water infrastructure and pointed to the fact that in order to satisfy MDG target 7c [1], doubling of finance was required. The Panel also found that "Serious defects in the governance of global water sector hamper its ability to generate and attract finance". The Camdessus Report, *Report of the World Panel on Financing Water Infrastructure* (Winpenny, 2003) was launched during the 3rd World Water Forum in Japan.

The Gurria Task Force (2006) focused on the demand side and looked into "access to finance by local governments" and "financing water for agriculture". The Gurria Report, *Task Force on Financing Water for All: Enhancing Access to Water for All, Financing Water for Agriculture* (Van Hofwegen, 2006) was launched during the 4th World Water Forum in Mexico. The findings of the Gurria Task Force with regards to local governments are the same as those issues which were subject to the 5th World Water Forum sessions. However, financing water infrastructure for agriculture was an orphan subject in the 5th Forum.

1 MDG7: Millenium Development Goal 7 – Ensure environmental sustainability. Target 7c aims reducing by half the proportion of people without sustainable access to safe drinking water and sanitation.

Both Camdessuss and Gurria Reports were titled "Financing Water for All". The OECD Report (OECD, 2009) launched during the 5th World Water Forum was titled "Managing Water for All" which also points to a shift in approaching water issues. The report presented the OECD's approach to pricing and financing. It comprised current approaches in the agricultural sector, strengthening financing for water *and* sanitation, and above all, the 3Ts (taxes, tariffs, transfers).

As a recurring theme of the World Water Forum agenda, the preparation of the 5th World Water Forum included discussions on finance in the thematic, regional and political processes. However, as the Forum commenced, discussions had a new dimension: the global financial crisis. As the crisis itself had recently surfaced, the financial world had not had time to react.

The documentation of the three parallel processes of the Forum differed according to the structure of the process. The Political Process outcomes[2] were the result of a series of preparatory meetings and represented international consensus on most issues. They were to be approved and announced during the Forum but no major modifications were expected. Similarly, the seven Regional Reports of the Regional Process had been prepared in meetings preceding the Forum and they had already been printed to be distributed during the event. However, even though the Thematic Process programme was set, the panellists and other participants responded to the new crisis.

Financial success should be sustained through good governance.

The message of the Finance discussions in all previous Fora was clear: we need more funding. However, the Finance message of the 2009 World Water Forum had an urgency aspect added to it: don't stop investing now.

While the Finance discussions were focused on sustaining the money flow into the water sector, the Governance discussions brought corruption to the fore. The global financial crisis, coupled with the increased awareness on the grave consequences of leakages in the water sector through corruption, resulted in accountability and transparency being presented as the main tenets of governance in the water sector along with stakeholder participation.

There is money to be made in the water sector!

The stakeholders of the global water sector prepared for the Forum bearing in mind that the water crisis had been coupled with the food crisis. However, the effect of the financial crisis on the already existing problem would have to be discussed on cue during the Forum and solutions had to be forged before the flow of money ceased. There upon came the response that the financial crisis also created opportunities and that there was money to be made in the water sector.

During the two-year preparation process it was anticipated that many arguments would be based on whether water is an economic good or not. In order to generate solutions, this potential bottleneck in water investments would have to be overcome and one way to do this would be to present the water sector as a viable investment which in turn would require recognizing water as an economic good.

2 Istanbul Ministerial Statement and the Istanbul Water Guide, Istanbul Declaration of Heads of States on Water, Parliamentarians for Water Statement, Istanbul Water Concensus

One important message at the Forum was that the water sector has a steady return on investment (ROI) which makes it a solid investment at a time of crisis, especially for the private sector. Another important message was that public investments should not be cut back. Otherwise, we would be faced with a worse water crisis that we will not be able to manage.

– *Water as an economic good*

Whether water is an economic good or not, in itself, has been a major, very controversial point of discussion ever since the Dublin preparatory conference for Rio in 1992. Water obviously has an economic *value*; however, recognizing water as an economic *good* would also open the door to marketing water.

Dublin Principles:

- Freshwater is a finite and vulnerable resource, essential to sustain life, development and the environment;
- Water development and management should be participatory- involving users, planners, and policy makers at all levels;
- Women are central to providing, managing and safeguarding water; and
- **Water has an economic value in all its competing uses and should be recognized as an economic good.**

The topic of "water as an economic good" was carefully avoided during the Forum due to its controversial nature. There were a few instances where the audience was reminded of the 1992 Dublin Principles but were assured that even though water should be recognized as an economic good, there was no intention of marketing water. However, the concept of "water as an economic good" was intrinsic to all discussions regarding pricing and public-private partnerships.

Financial Sustainability

There are two components to the financing issue: (1) financing water infrastructure investments and (2) financing water services. Sustainability in financing infrastructure requires financial sustainability for each and every actor in the water sector; in addition to, access to capital markets, especially local capital markets. Sustainability in financing water services can be achieved through sound pricing strategies and therefore, sustainable cost recovery.

The High Level Finance Panel[3] was about how to find money. The world was at the beginning of the financial crisis. The general expectancy was that the private sector capital inflow to emerging or developing markets would drop significantly. It was important to bring in Regional Financial Institutions (RFI) and

3 Chair: Mehmet Şimşek,Minister of State. Panellists: HIH Willem-Alexander, Prince of Orange; Chair of the UN Secretary-General's Advisory Board on Water and Sanitation (UNSGAB); Sha Zukang, UN Under-Secretary-General; Angel Gurria, Secretary-General, Organization for Economic Cooperation and Development (OECD); Simon Brooks, Vice President, European Investment Bank; Arjun Thapan, Director General, Southeast Asia Department, Asian Development Bank; Katherine Sierra, Vice President for Sustainable Development, World Bank; Alexander Mueller, Assistant Director General, Food and Agriculture Organization of the UN (FAO); Kazushi Hashimoto, Senior Special Advisor, Japan International Cooperation Agency (JICA); Patrick Cairo, Executive Vice President, Strategy and Marketing, Suez Environment.

encourage local financing opportunities. National stimulus packages were being prepared and these could also include public infrastructure investment. On the other hand, financial crisis meant that the markets would not be working and no public money could substitute the markets. Official Development Aid (ODA) to developing countries could be a solution but that had already been decreasing.

Under the circumstances, even if new infrastructure investments could not be made, finances had to be allocated for maintenance and existing water services had to continue. In order to sustain public funding, as well as, to attract private investment, sustainable cost recovery was suggested as a solution by all the panellists of the High Level Finance Panel.

– Strategic Financing and Cost Recovery

Water services provision is assumed to be the duty of the government towards its citizens, even though access to water is yet to be recognized as a fundamental human right. Water services are best given by local providers, public or private; therefore, ensuring the service provider's access to local capital markets is necessary. Financial sustainability of the actors, in turn, is a prerequisite for access to capital markets which can be achieved through cost recovery supported with the implementation of sound transparency and accountability measures.

– Bankability

Marketing the water sector as a good, viable investment needs clearing certain issues with regards to the private sector, the International Funding Institutions (IFIs) and the Regional Funding Institutions (RFIs). The projects must be bankable which means there should be a good project with good project management. The private sector is profit oriented and risk averse by nature. Therefore, regulatory controls must be in place before private sector participation is considered in water services. Issues relating to PPPs have been succinctly addressed in the Istanbul Water Guide (Art.101-105). However, another hindrance to securing funding through finance institutions is that during a financial crisis, the markets do not work as expressed by both Angel Gurria (OECD) and Simon Brooks IEIB). This in turn makes ODA more important than ever. One other clear message in the Finance discussions was that the amount of ODA should increase to avoid a humanitarian crisis in certain parts of the world.

The Africa Regional Document (AMCOW, African Development Bank Group, 2009) points exactly to this issue. Prepared by the African Development Bank Group, the Document's motto is "An Agenda to Implement Existing Political Commitments". The document is very precise about the need for major scaling up of finance for expansion of Africa's water infrastructure, as well as, the need to extend knowledge about financing to agriculture and energy.

Bankability was discussed in Topic 5.1. "Sustainable Finance for the Water Sector" within the context of closing the financing gap, resource allocation and the need for governance reforms. The telecom sector was used as an example of private sector participation in what is traditionally known as public services. However, projects should be banked for longer periods in the water sector than in the telecom sector. This was further elaborated on during Topic 5.2. "Pricing Strategies as a Tool for a Sustainable Water Sector."

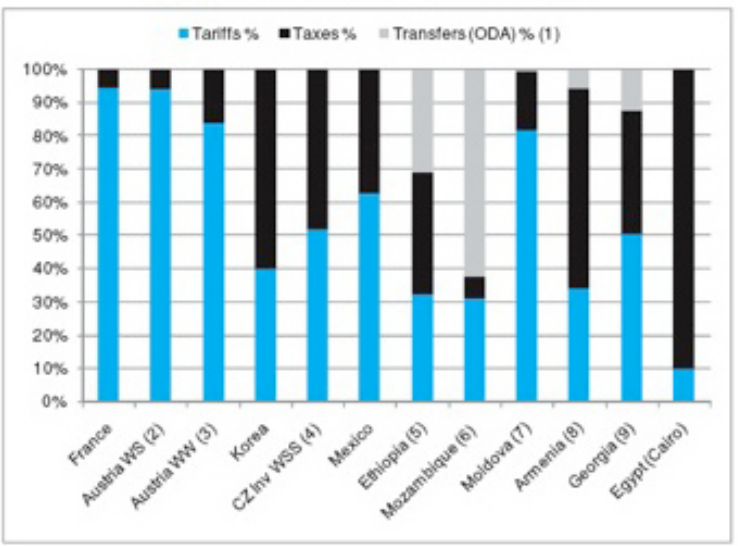
– Taxes, tariffs, transfers (3Ts) and Pricing

3Ts were at the centre of thematic discussions in relation to sustainable cost recovery. It was advised that the combination of 3Ts must be balanced according to the location. Most European countries recover water services costs through tariffs; whereas, developing or less developed countries around the world rely heavily on transfer. It can easily be argued that transfers are not a sustainable form of cost recovery in developing and last developed countries. The importance of tariffs in cost recovery also underlines the importance of pricing. Operational status of existing infrastructure (i.e. leakages), illegal water use, collection rates, social considerations, water services coverage are important factors in water services pricing.

The price of water must be affordable. Various methods could be employed to make water affordable while sustaining cost recovery, i.e. increasing the price of water with the amount of water used, applying different prices according to income. However, subsidizing should never be used as it runs contrary to cost recovery. Subsidizing could also result in poor water quality and poor service provision. Session 5.2.2. "Affordable and Sustainable Water and Sanitation Services: The Role of Tariffs and Other Instruments", as well as, Istanbul Ministerial Statement Article 19 and IWG Articles 109, 114-118 specifically address tariffs, pricing and affordability.

3Ts were vigorously promoted by the OECD during the Forum. Such emphasis warrants an in-depth look into the Forum discussions and beyond.

Whatever pricing strategies, people must have access to water
Richard Franceys, Session 5.5.1 wrap-up



1. Includes ODA grants as well as private grants, such as through non-governmental organization.
2. WS = water supply
3. WW = wastewater
4. CZInv WSS = Czech Republic, composition of capital investment for water supply and sanitation
5. 2005/06
6. Rural WS, 2006
7. 2006

(OECD, 2009)

Sustainability in water services provision is possible through cost recovery. Cost recovery is achieved through a balanced combination of tariffs, taxes and transfers (3Ts). Cost recovery is also essential for local governments' access to funding. Combination of 3Ts differs according to location. Cost recovery is achieved mostly through tariffs in the developed countries; whereas, transfer (mostly ODA) make up the bigger portion of the resources in the developing and least developed countries.

Corruption, Accountability and Transparency

The global financial crisis and the recent food crisis, contribute to the problems that surface in water resources management and provision of water services. The Global Corruption Report (GCR) (Zinbauer & Dobson eds., 2008) and David O'Leary in the thematic sessions, have argued that the governance crisis embedded in these other crises is a catalyst for the water crisis that we are experiencing today. The Human Development Report (HDR) 2006 (UNDP, 2006) states that the inadequate access to water of 1.1 billion people and lack of basic sanitation for 2.6 billion in the world "are rooted in institutions and political choices, not in water's availability."

The role of water in human development is undeniable. The progress in water sanitation services in some of the major cities of Europe and the United States during the last century provides a very good example for what can be achieved in human development through reliable water governance. The London and New York of 19th century was not quite different from the Sub Saharan African cities in terms of child mortality due to water-related diseases. Within a century, reliable policies in water sector reverted the situation of human development in many aspects in the regions of the global North (UNDP, 2006).

Water services financing and investing in the water sector were the main loci of finance discussions in the Finance Theme. However, corruption, lack of transparency and accountability constitute the main barriers to adequate financing and conducting effective investments in the water sector. The HDR 2006 proposes that in order to achieve the MDG target 7c on access to safe drinking water and sanitation, "[...] on the basis of the lowest cost, sustainable technology option amount to an additional cost of 10 billion dollars a year". Ironically the GCR 2008, states that 20 – 30% of public sector budgets devoted to water are wasted due to malfunctioning of the governance schemes and rampant corruption (Zinbauer & Dobson, 2008). This means, up to 50 billion dollars is wasted from public budgets spared for water in one decade as Hakan Tropp mentioned in Session 4.3.2 "Keeping a Close Watch: Transparency and Accountability in the Water Sector". It was acknowledged several times by the speakers of Topic 4.3 "Ethics, Transparency and Empowerment of Stakeholders", that "corruption in no other sector has a profound effect on the lives of people", reiterating the statement put forward by GCR 2008 that if corruption can be prevented indifferent sectors effecting water services, a lot more can be achieved in terms of human development and reaching various the MDGs.

Sustainable financing is crucial in improving water services provision. However, even if adequate financial support is sustained, corruption undermines the effects of the funds that are injected through various sources. The Ugandan case

gives a stark example of this situation. Although the water budgets generally experience "chronic underfinancing" in many of the developing countries as expressed by Leatitia Obeng in 4.3.3, "Beyond Water Bribes: How to Build a Corruption-Resistant Water Sector", in Uganda the share of water exceeds 4% of the national budget. Moreover, as Jasper Thumuhimbise iterated in the same session, the Ugandan legislation was adopted directly from the legislations of the developed nations who excelled in water resource management. However, ironically, Uganda was at the top of the league of corruption. Following the formation of Ugandan Anti Corruption Coalition, with the diagnosis of the problems through stakeholder involvement and active communication between the public authorities and the service receivers, a noteworthy progress was attained in the fight against corruption in water services provision. The pattern for effective reforming in the water sector, especially in water institutions can be deduced from the Ugandan case. IWG Art. 89 underlines the need for carrying out policy, legal and regulatory reform and the obligation for these three reforms to be implemented concurrently. Uganda had implemented policy and legal reforms but due to the lack of regulatory mechanisms and poor implementation on the field, the country was in the swirl of corruption. With the establishment of regulatory bodies involving stakeholders, it seems that the loop of corruption had been broken. The Ugandan example was also presented by William Muhairwe in the wrap-up of PPP discussions.

Power relations between stakeholders, service providers and receivers constitute a crucial part of water management and this stands as one of the main reasons this for the lack of accountability in the sector. Moreover, HDR 2006 clearly states that the current water crisis has its roots in "[…]unequal power relationships, as well as flawed water management policies that exacerbate scarcity." (UNDP, 2006). The empowerment of service receivers and their inclusion in decision making processes help to "achieve sustainable, resilient and effective practices" (IWG Art. 97) and contribute to the fight against corruption. Although there is a positive correlation between poverty, lack of sufficient governance and corruption as Hakan Tropp from WIN remarked in session 4.3.3, if the mechanisms for including the impoverished populations of the world today to decision making processes and curbing of the asymmetry of power between the service providers and receivers are achieved, the processes of accountability can start functioning. Given the fact that corruption has a much broader perspective than service delivery and touches upon the issue of human rights, rule of law and degrading of opportunities for various underprivileged groups in the society, the process of incorporating "participation […] and consensus based decision making in the governance structure" (IWG Art. 99) has the potential of expressing the voice of the ones that are the weakest and improving the life quality of millions of people. Power relations also came up in Session 5.2.1 "Pricing Water Services" where it was concluded that half the stakeholders must be in Session 4.3.1 "Can Public Participation Lead to Better Water Management".

It takes two for corruption.
Miguel Solanes, Session 4.3.2

The remark of Miguel Solanes from Madrid Water Institute "In today's global economy we have devised set of rules to protect investors and the investors are there to maximize their profits, government's role is to conciliate the profit concerns of the investors and the concerns of the constituents." also shows the asymmetry of power between the recipient and provider of the water service from

another perspective. In a sector which has an estimated value of 210 billion dollars in the US, EU and the Japan and for which investors are called on repeatedly in likes of the OECD Report (OECD, 2009), institutional and legal reforms must be implemented in order to execute necessary policies for the accountability of the service providers and oblige them to be transparent in their communication with the service receivers and other stakeholders. The 13th paragraph of the Istanbul Ministerial Statement illustrates the commitment of the political elite in reforming the legal and institutional structures. The commitment of the political leaders is vital for building bottom up pressure for water reform as advocated by David O'Leary. In the Political Process, Ministers committed themselves on the promotion of the institutional water management reform, strengthening the water sector laws and regulations and supporting public participation from all stakeholders.

Accountability measures must be implemented through bottom up pressure building in order to achieve institutional, legal and regulatory reform for fighting corruption. Demanding necessary information from the service providers, striving to be included in decision making processes of local and national mechanisms and devising judicial structures to attain their legal rights were some of the instruments that can be used by the service receivers for a checks and balances systems to be put in place were mentioned by the Thematic Session participants. Laurel Firestone from Community Water Center in the US, California set out two concrete policy propositions for the achievement of accountability and transparency in water services in Session 4.3.1 "Can Public Participation Lead to Better Water Management". First proposition was that, short summary information with a proper language which is non technical and considers local ethnic groups from the service providers to the public must be demanded. In this summary information answers to questions like; what is in your water, what the monitoring reports indicate, who is in charge of the operators and how to contact operators when needed are indicated. Additionally, she drew attention to the need for reports which present the reasons for the likelihood of an increase in prices when there is an upcoming increase and she underlined the need for public boards with the participation of the service provider boards to discuss the contents of the reports with the service receivers.

Daniel Marcovitch from Steering Group of the National Observatory on the Performance of Water and Water Treatment, stepped into the area of public private partnerships (PPPs) in Session 4.3.2. "Keeping a Close Watch: Transparency and Accoundability in the Water Sector" and came up with a policy proposal stating that when water service and sanitation management service provision is transferred from public to private, the local authority or the municipality must consult with its constituents and may have mini referenda so that the service receivers can directly influence the decision making process and thus make the process more democratic and more transparent.

The top down monitoring and regulatory oversight must be complemented with bottom up accountability and transparency concerns. In this regard, recommendation Two on the Reforms of GCR 2008 clear states that "governments and the public sector continue to play the most prominent role in water governance."

From Diagnosis to Action: Lessons for fighting corruption in the water sector

Lesson One: Scale up and refine the diagnosis of corruption in water – the momentum and effectiveness of reform depend on it.

Lesson Two: Strengthen the regulatory oversight of water management and use.

Lesson Three: Ensure fair competition for and accountable implementation of water contracts

Lesson Four: Adopt and implement transparency and participation as guiding principles for all water governance.

Global Corruption Report 2008: Corruption in the Water Sector

Stemming the Corruption Tide: Recommendations for Reform

Lesson One: prevent corruption in the water sector, as cleaning up after it is difficult

and expensive

Lesson Two: understand the local water context, otherwise reforms will fail

Lesson Three: cleaning up water corruption should not be at odds with the needs of the poor

Lesson Four: build pressure for water reform from above and from below

Global Corruption Report 2008: Corruption in the Water Sector

Public-Private Partnerships (PPPs)

Access to water and sanitation is assumed to be a service that must be supplied, sustained and regulated by the public sector. Water services provision is a natural monopoly. On the other hand, water services provided by the public sector sometimes cannot meet the demand. Public private partnerships were offered to as solutions to overcome this problem.

The subject of PPPs came up in various Thematic sessions but PPPs were a thematic topic with four distinct sessions devoted to the discussion of its various aspects. These sessions were convened by the OECD, the World Bank, the International Water Association and the UN Habitat. "Public sector or private sector discussion is over" was the starting point for the PPP sessions. However, the panels, as well as, the Q&A sessions proved that the public vs. private debate was far from being over where it was concluded that half the stakeholders must be ready to give up power.

Topic 4.4: Optimizing Public & Private Roles in the Provision of Urban Water Services

4.4.1: Towards a Vibrant Local Marketplace – Opportunities and Trends, Experience to Date, and Policy Options for the Future

4.4.2: Options of the Delivery of Water and Sanitation Services in a Rapidly Changing Environment

4.4.3: Building Sustainable Water Supply Chains with Strong Regional & Local Contribution, Experience & Potential Policies

4.4.4: Wrap-up and Synthesis, Including a Discussion on Policy Options

Session 4.4.1 on "Optimization" was not only the first Thematic session held in the 5th World Water Forum, it was also the only thematic session held on the Opening Day. The first speaker of 4.4.1, Phillip Marin from the World Bank, set the tone of the session, as well as, the topic 4.4."Optimizing Public & Private Roles in the Provision of Water Services". He presented a new study by the World Bank on public-private partnerships in the water sector. A number of PPPs had been quantitatively analyzed in this study (built-operate-transfer projects were not included). He concluded his rapid and powerful presentation by summarizing the essential lessons from the study:

1. PPP is a viable option in the developing countries.
2. The pattern of PPP development has changed in the developing countries; PPPs are not dominated by multinationals anymore.
3. Trying to find private money to do the work was a big mistake.
4. Private operators improve service quality and efficiency.
5. Social considerations must be explicitly implemented in the PPP reforms.

Philip Marin's reply to a question of using qualitative data along with quantitative data was that the only way to do this analysis was a quantitative approach.

The second speaker, Paul Reiter from IWA, continued in a similar tone. He said that the problem of urban water and sanitation in low to middle income countries was not being solved fast enough. He added that 93% of the utilities need reform. In terms of private ownership, he said that the water utilities were public and only in Chile, the UK and the US there was serious private ownership. His comment was "Let's put that red herring behind us".

A participant from the audience asserted that this forum was not an open and a democratic forum and that this was a prestructured panel. He continued to say that the panel was being revisionist about the private sector and it was trying to save the private sector by not trying to ask the right questions. Paul Reiter responded by saying that this was the first time this session was titled "optimizing" and that he had been to all the fora.

The underlying discussion in these interventions in this session was that the World Bank had for a considerable period of time supported private sector involvement

in water services. In many parts of the world, private sector contracts were being terminated and there were studies showing that PPPs had not been successful. The World Bank conceded that the PPPs had not been as successful as previously anticipated but they had not been unsuccessful either. The reaction from the some participants of the audience to this approach was that the private sector had vested interest in the World Bank. Since private sector involvement drives considerable reaction, it was suggested that the World Bank had softened its rhetoric, it sounded as if it was rethinking its position; however, its support of the private sector remained undiminished.

Philip Marin's presentation included a finding on the increase of collection rates and reduction in leakage problems with PPPs. The next intervention came from the Turkish Ministry of Environment and Forestry. The question was whether leakage might have been reduced because the public sector had renewed the infrastructure. Philip Marin responded that certainly the public sector could increase collection efficiency or reduce leakage. It is simply that the World Bank study shows that PPPs achieved this in many instances.

The second part of the session was devoted to a regional panel. Panelists talked of experiences in different parts of the world. One issue that must be mentioned in this part of the session is that a failing utility should have an alternative.

In Session 4.4.2 on "Options", the benefits of public sector participation were presented through extensive case studies from Africa, Southeast Asia and Latin America. Small scale providers formed the core of the session. There were two highlights to the discussions. First, even though same problems have to be dealt with in different parts of the world, solutions must be region-specific. Sharing experience creates knowledge wealth but solutions must be developed taking specifics of the site into consideration. Second was the importance of stakeholder communication. "Managing Water for All: An OECD Perspective on Pricing and Financing" (OECD, 2009) and "Private Sector Participation in Water Infrastructure: Checklist for Public Action" (OECD, 2009b) were also launched during this session.

Session 4.4.3 was on "Supply Chains". The main message of the session was that infrastructure investments without strong supply chains were not sufficient for sustainable provision of water services. Some of the messages from this session were:

1. Human need is the driver
2. A decentralized system works more efficiently
3. Local support network (i.e. lawyers) is necessary
4. Collaboration is more important than competition
5. There should be communication with NGOs
6. There must be standards that all stakeholders abide by
7. Investment should be financed in local currency
8. The price of water should be affordable by the local customers
9. Contracts should include knowledge transfer, technology utilized should be local

4.4.4, the wrap-up session, was where it was finally admitted that the debate on "public sector vs. private sector" was not over.

The 24 principles in the "Private Sector Participation in Water Infrastructure: Checklist for Public Action" (OECD, 2009b) clearly demonstrate the mistakes that can be made unless certain precautions are taken prior to allowing private sector participation in water services provision. The establishment of a regulatory agency is an unquestionable prerequisite. The IWG articles from 101 to 105 provide an excellent governance roadmap for PPP implementation.

The Political Process documents were shaped with the participation of country representatives, bureaucrats and representatives from international organizations. Even though, PPPs were presented as a viable option for water services financing and governance, the IWG regards public sector as the main party responsible for providing water services. According to the IWG, the capacity and the efficiency of public authorities must be strengthened. The priority is given to public service providers / utilities. However, the best provider must be chosen regardless of sector. The roles of stakeholders must be clearly defined and formalized. Last but not least, there must be political will.

Today's water crisis is largely a "Governance" problem.

World Water Development Report, 2009

Finance and Governance – the overarching theme

Finance and Governance were themes onto their own and together they constituted the overarching theme of the Forum.

Istanbul was the first World Water Forum city to host a Heads of States Summit. The event was organized by the Turkish Ministry of Foreign Affairs and convened by the President of Turkey. Invitees included heads of states and representatives from international organizations. The Summit aimed to enhance political awareness for water by addressing the issue at the highest political level. Angel Gurria, Secretary General of OECD, addressed the Summit on issues regarding the OECD Reports that were going to be launched during the Forum. Mr. Gurria pointed out that there was no overall scarcity of water but scarcity of quality management in the way we address the issue. The Governance Theme, carried the this approach one step further and emphasized the corruption aspect of water management. While the Finance Theme prioritized the financial sustainability of the financial institutions providing necessary funds and the water service provider, the Governance Theme looked into the workings of these institutions and prioritised the accountability and transparency of the institutions involved. It mainly focused on the prevention of corruption for the efficient exploitation of the financial resources.

Financing and Governance in the water sector was the only topic that was specifically addressed in the Heads of States Summit through Mr. Gurria's intervention.

Improving water governance can help save huge amounts of money. The organization of the water sector, its incentive structure influence the efficiency of water uses, thus increasing the attractiveness to investment. *Angel Gurria, Launching of the OECD Report, keynote speech.*

The Forum programme included a number of sessions on financing. Launching of the OECD Report on Pricing and Financing was followed by a Technical Experts Panel. One of the five High Level Panels was on Financing Water. There were a total of 15 thematic sessions on issues varying from pricing to transparency to bankability and PPPs.

Starting with the 2003 Camdessuss Panel, it was reported in the World Water Forum medium that more funding is required in the water sector. The Camdessuss Report said that the amount of funding should be doubled. The 2006 Gurria Report that was presented in the 4th World Water Forum, specified local governments and agriculture. The OECD Report launched at the 5th Forum was more specific on pricing issues. All three reports encouraged private investment to close the gap between supply and demand. However, private investment in the water sector was expected to drop due to the global financial crisis . Therefore, albeit giving the same key messages in all sessions, there were impromptu discussions on how the financing sector would react to the financial crisis and what could be done.

Establishment of River Basin Organisations and encouraging stakeholder participation in decision making were offered as tools for transboundary water cooperation under the Basin Management and Transboundary Water Cooperation topic. It was also pointed out that such facilitation requires financing. Education and capacity development, without which water solutions that are forged in expert panels cannot be disseminated, requires substantial funding. Implementation integrated water resources management that could help to manage the competition for water between agriculture and other uses (OECD, 2009) literally amounts to governance overhaul which cannot be achieved without financing. The African Regional Report focused mainly on financing requirements to meet MDG goals just as other regional reports pointed out financial needs for various needs related to water. Consequently, money is not only necessary for infrastructure investment and sustainable service provision but also for other purposes such as resource management. Financial success cannot be attained without taking into consideration demands from different parts of the water sector.

No other subject was more broadly discussed by a wide spectrum of stakeholders than water financing. However, financing agricultural water services and infrastructure was not adequately addressed in the Forum Programme. It was only addressed in the High Level Panel by Alexander Mueller FAO in a keynote speech. Leaving agriculture off the Forum programme seems to have been a conscious decision of the Programme Committee and a very unrealistic one at that. It is not possible to discuss financing water for agriculture separately from financing water infrastructure and services.

The discussions on finance attracted stakeholders with various backgrounds; meanwhile, the discussions regarding governance cut across various issues related to the current water crisis. While the debates encapsulated in Topic 4.3 touched mainly upon the threats of corruption and the need for transparency along with institutional reform, the issue of governance was the heart of the problem or the solution in all of the issues that were discussed during the Forum. This fact was also revealed by the WWDR-3 statement "Today's water crisis is a governance problem". Starting from financing of water services, provision, to

agricultural water use, the need for defining roles and responsibilities (IWG Art. 103), the need for capacity building (IWG Art. 105) were the recurring messages for prospective reform at the end of session discussions, regional process debates or in political process meetings.

These Forum discussions revealed that, contrary to other issues related to water, governance remains the only area that is systematized, organized and structured solely by the human input in response to the needs of the people; outside factors are not the sole determinant. This character of governance makes it both a great opportunity and a great risk for the future of water. An opportunity as also mentioned by WWDR, in respect that the current water crisis usually referred to as the crisis of mismanagement and bad governance, the reversion of the current situation with the involvement of the people concerned, can result in great leaps forward and a safer world in terms of water security. A great risk in respect that when the practices of bad governance and corruption is underplayed, they persist and it is extremely hard to reverse the corroded institutions and the process in the direction of good governance.

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DID WE BRIDGE THE DIVIDES?

The main theme of this Forum was "Bridging Divides for Water" . In this respect, was this Forum really successful in bridging the divides?

Access to water and sanitation was a subject where the Thematic Process participants were disappointed with the outcome of the Political Process. The Thematic Process discussed the *implementation* of the right to water and sanitation; whereas, the Political Process only recognized access to water as a human need and decided to wait for the outcome of the UN Independent Expert's mandate. There was a divide between public expectancy and political will which the Forum was unable to bridge. One should also take into consideration that the conveners of the thematic topics were invited to be a part of the political process preparation; therefore, their expectancy was not unfounded.

Agriculture was discussed mostly within the scope of attaining the MDGs on food security, and poverty and hunger eradication. That decision, apparently taken at the beginning of the Forum preparation process, proved to be impractical. Because no discussion structure had been attributed to agriculture within the Forum Programme, the issues which could not be discussed in the assigned discussion slots were carried out under different subjects in their various aspects, i.e. irrigation under multipurpose water structures, infrastructure investment under finance and governance, poverty eradication under MDG attainment. While the main divide on the water – food nexus was resting on the recent food crisis and the problematic structure of the current world food markets, this main divide was only brought up in the publications that were distributed in the Forum, not in the Forum debates.

Migration was a first time Thematic Topic in 2009. The topic had been planned as *water related migration* or *environmentally induced migration;* however, due to its first time nature, participants digressed and discussed migration in its broader context. The subject was barely mentioned in the Political Process outcomes. Now that the problem had a part in the formal programme, the Forum has the potential to play a role in bridging divides for migration in future. The 5th World Water Forum has been a good, solid step towards this end.

A number of challenges related to data were identified within the Forum processes: access, collection, sharing, analysis and conversion into information and knowledge. The right data at the right time in the right way is crucial for informed decision making. Current institutional frameworks do not allow data from different sources to be joined. Moreover, "what data is available is incomplete and uneven and even when the quality of data is good, access is limited". Problems were defined and solutions were identified in the Thematic Process. There was political will in the Political Process. Yet, there was no roadmap for implementing the solutions. Technology, discussed under the same Thematic Area, was an underdog. Although, technology is an enabling mechanism for implementing various solutions, it did not have the part it deserved in the Forum discussions. Divides related to data and technology were more technical in nature. The Forum was able to bridge these divides in terms of understanding; however, since there were no commitments towards implementing solutions, time will show whether this bridge will hold.

Disaster mitigation and management was a topic thoroughly discussed in the Forum. The input from the Asia-Pacific Region and the Japan Water Forum, as well as, the support of the UN played a crucial role in the success of this topic. All things considered, High Level Panel on Water and Disaster was the only place where a commitment was introduced. The most important divide in disaster mitigation and management is between government, science and civil society. Therefore, trialogue is needed to bridge this divide and the Forum provides a good stepping stone for this purpose.

The 1997 UN Convention on the Law of the Non-navigational Uses of International Watercourses was frequently mentioned in the Thematic Process. There was a divide between stakeholders that saw the Convention as a solution to transboundary water issues and stakeholders who voiced concerns over the fact that the Convention did not reach the required number of signatures over the last 22 years. Article 58 of the Istanbul Water Guide states that "Optimal utilization and effective protection of the transboundary surface and ground water resources are only possible if riparian states cooperate in line with internationally agreed principles". The Forum has been successful in bridging a succinct divide with this article. Another divide of a lesser magnitude – more related to governance of transboundary waters – had been the intervention of parties other than riparian states in transboundary cooperation. Some stakeholders argue that third party intervention is required to offset power asymmetry between riparians; whereas, other stakeholders point out that unsolicited advice that do not take the riparian opinions into consideration is not acceptable. However, this is more of a governance issue than a divide.

Infrastructure is an enabling mechanism for access to water and sanitation and it does not present a divide in itself. Although, it has been analyzed as a subject onto its own due its overarching nature in this Forum, it is more related to technology.

There were a number differences of opinion rather than divides in water financing and governance in the Forum panels. In general, the Thematic Process supported private sector participation as solution and the Political Process gave priority to improving the public sector while facilitating private sector participation by regulating public-private partnerships. The obvious divide in some of the sessions was between the invited panelist/speakers and the participants in the

Bridging Divides for Water

Bridging divides means creating enhanced understanding and imporved information exchange between water users, decision makers and water practitioners, at local, regional and global levels. It implies creating new or reinforcing existing conncetions and nexuses between water and health, water and energy, water and climate, freshwater and seawater. The theme also pertains to the bridging of gaps in water technology, financing, capacity and management , with shared knowledge and experience.

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audience. In order to generate tangible outcomes and commitments, high level involvement is essential. On the other hand, this high level involvement in panels and discussions also results in an attitude which can be interpreted as arrogant by the weaker stakeholders. This misunderstanding is not only an obvious divide but also very detrimental to formulating solutions. The Forum was partly successful in bridging this divide by providing an open discussion platform. There are obvious divides in financing water services and infrastructure that can be bridged via good governance practices. However, because finance and governance had been defined as two separate Themes, this was never discussed in a way that would lead to pragmatic solutions.

Panels are only a part of the World Water Forum scheme. The Water Expo was a venue for constant interaction between different nations and different water sectors. A number of country stands were set up that hosted afternoon panels themselves. The Water Fair housed the Learning Center, the Citizen's Water House and the Speaker's Corner. The Children's Water Forum and the Youth Water Forum enabled the inclusion of children and youth in the Forum process. More than 100 Side Events were organized allowing for many people who could not be a part of the Thematic Process to voice their opinions and communicate their messages. The Istanbul Water Guide, a result of the Ministerial Process, is a true roadmap for the water sector.

A forum is a public meeting for open discussion. In this regard, the 5th World Water Forum was successful in providing a bridge for the divides between the regions, sectors, various levels of society, policy makers and the public, and people with differences of opinion. Then again, providing and open discussion platform is the first step towards bridging divides. All stakeholders must have equal access to this platform so that the Forum can be all inclusive and generate solutions that can be implemented politically and on the field.

Simply put...

The Forum's Thematic Process had six different Themes each with a number of Topics divided into many sessions. The Regional Process identified the needs and commitments of different regions. There were as many Side Events as Thematic session. There were more than 200 Thematic, Regional and Side Event sessions, in addition to the Political Process meetings. However, everyone was looking for answers to three simple questions:

1. Do I have access to safe water?

2. Is my access continuous?

3. How much do I have to pay for it?

An Istanbul Perspective for Bridging Divides for Water – the synthesis of the 5th World Water Forum – is the last in the series of publications documenting the search for the simple answers to these simple questions.

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ABBREVIATIONS

AMCOW	African Ministerial Conference on Water
CBD	Convention on Biological Diversity
COHRE	Center on Housing Rights and Eviction
CPWC	Cooperative Programme on Water and Climate
DRR	Disaster Risk Reduction
FAO	Food and Agriculture Organisation
FAOL/AGL	Land and Water Division, Food and Agriculture Organization
FAN	Freshwater Action Network
FLIWAS	Flood Information and Warning System
GAP	Southeastern Anatolian Project Regional Development Administration
GCR	Global Corruption Report
GDACS	Global Disaster Alert and Coordination System
GEF	Global Environment Facility
HDR	Human Development Report
HFA	Hyogo Framework for Action
IAD	International Fund for Agricultural Development
ICA	Infrastructure Consortium for Africa
ICID	International Commission on Irrigation and Drainage
ICHARM	International Centre for Water Hazard and Risk Management
IFI	International Funding Institution
IFAD	International Fund for Agricultural Development
IFAS	Integrated Flood Analysis System
INBO	International Network of Basin Organizations
INSARAG	International Search and Rescue Advisory Group
IPCC	Intergovernmental Panel on Climate Change
IOM	International Organization for Migration
ITU	Istanbul Technical University
IUCN	International Union for Conservation of Nature
IWA	International Water Association
IWRM	Integrated Water Resources Management
IWRM-Net	Regional and National Research Programmes on Integrated Water Resources Management

IYS	International Year of Sanitation
JICA	Japan International Cooperation Agency
LDCs	Least Developed Countries
MDGs	Millennium Development Goals
MEDSTATII	Euro-Mediterranean Statistical Cooperation Programme
NGEST	Northern Gaza Emergency Sewage Treatment Project
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PWA	Palestinian Water Authority
PPP	Public Private Partnership
PSP	Private Sector Participation
RBO	River Basin Organisation
RFI	Regional Funding Organization
ROI	Return on Investment
RTWS	Right to Water and Sanitation
SEEAW	System of Environmental-Economic Accounting for Water
SIC-ICWC	Scientific Information Center of Interstate Commission for Water Coordination of Central Asia
SIDS	Small Island Development States
UNAM	Universidad Nacional Autònoma de Mexico
UNCCD	United Nations Convention to Combat Desertification
UNCEEA	UN Committee of Experts on Environmental-Economic Accounting
UNDAC	United Nations Disaster Assessment and Coordination Team
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-IHE	The UNESCO Institute for Water Education
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UN-ISDR	United Nations International Strategy for Disaster Reduction
UNSGAB	United Nations Secretary-General's Advisory Board on Water and Sanitation
UNU-EHS	United Nations University, Institute for Environment and Human Security
UNU-INWEH	United Nations University Network on Water, Environment, Health
UN-WWAP	United Nations World Water Assessment Programme
UNW-DPC	United Nations University, UN-Water Decade Programme on Capacity Development
WMO	World Meteorological Organization
WWAP	World Water Assessment Programme
WWC	World Water Council
WWDR	World Water Development Report
WWDR-3	The United Nations World Water Development Report 3: Water in a Changing World
WWF	World Wildlife Fund

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