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5TH WORLD WATER FORUM HIGHLIGHTS: SATURDAY, 21 MARCH 2009

On Saturday, participants attended two special focus sessions on “irrigation: efficient use of water in agriculture” and “climate-related disasters.” The thematic process came to a close, with wrap-up sessions on the themes “advancing human development and the Millennium Development Goals (MDGs),” “managing and protecting water resources,” and “education, knowledge and capacity development.” Ministers prepared for the Forum closing by attending a series of roundtables.



L-R: Mehmet Mehdi Eker, Minister of Agriculture and Rural Affairs, Turkey, and Chen Lei, Minister of Water Resources, China

SPECIAL FOCUS SESSIONS

IRRIGATION: EFFICIENT USE OF WATER IN AGRICULTURE: Chaired by Akif Özkaldı, Deputy Director of Turkey’s Directorate of State Hydraulic Works (DSI), the session focused on country experiences in Mexico, China and Turkey. Chair Özkaldı outlined three focal areas for the presentations, namely legal and institutional arrangements, planning and development, and operation and maintenance of irrigation systems.

In the panel on Mexico, presentations addressed institutional structures and specific policy initiatives. One described the main recommendations of a water tribunal held in Zaragoza in 2008 on water resource management, including developing

participatory governance strategies. Panelists outlined the institutional framework in Mexico, noting that Conagua assigns water permits for both water withdrawals and wastewater emissions, and emphasized the need for investment in activities that improve water savings and productivity. They described the shift to decentralized administrative control over irrigation districts.

In the panel on China, Chen Lei, Minister of Water Resources, China, highlighted his country’s central role in world food security. He stated this security is challenged by land degradation, population growth, climate change and water scarcity for food production. Panelists described: the need to rehabilitate ageing irrigation infrastructure; the legal framework for water resource management, including legislation on state



The dais during the session on Irrigation: Efficient Use of Water in Agriculture

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Mehmet Mehdi Eker, Minister of Agriculture and Rural Affairs, Turkey

water resource ownership and conservation requirements; the need to balance public and private sector roles for irrigation system management; and participation by farmer water user associations in irrigation management activities.

In presentations on Turkey, panelists identified new financing strategies for irrigation investments, including public-private partnerships and Mehmet Mehdi Eker, Minister of Agriculture and Rural Affairs, Turkey, highlighted policies and action plans to address climate change impacts. Presenters cited rural activities as important contributors to the national economy and encouraged land consolidation for increasing irrigation efficiency and land productivity.

Chair Özkaldı highlighted the common challenges and priorities across the countries, particularly the need to modernize irrigation. He said all three panels noted the regional variability of water availability and the consequent importance of water efficiency for meeting future food production demands. All panelists mentioned the necessity of accounting for social, political, economic and technical considerations in water management for agriculture.

In the ensuing discussions, a question about corruption raised the issue of “water banks” to regulate the transfer of water rights and the need for transparency and dialogue between governments and water users. Other participants commented on: the economic sustainability of water user associations; implications of energy costs and irrigation technology; the need for a stepwise approach to increasing irrigation efficiency; and the use of flexible financing and agricultural development funds to increase productivity in water use.

Participants also discussed, *inter alia*: the need to consider water quality as well as quantity in irrigation discussions; biological research on crop growth and water uptake to increase irrigation efficiency; wastewater treatment and reuse; the use of international funds for transboundary water cooperation, and the role of domestic water efficiency in reducing demands for water from transboundary basins; impacts of the financial crisis on the viability of public-private partnership projects for irrigation infrastructure; implications of land use, including forestry, on water availability; mechanisms for water pricing; minimization of pesticide and fertilizer use; and associations for farmer training.

CLIMATE-RELATED DISASTERS: On “management of water-related disasters in view of climate change: challenges and future directions from the perspectives of meteorological services and water managers,” Mehmet Karaca, Istanbul Technical University, introduced a series of presentations made during two panel sessions on issues including: climatological

monitoring in Turkey; technologies that monitor aspects of climate and environment, including various satellite monitoring systems; the World Meteorological Organization’s strategy to mitigate and adapt to the effects of climate change; validation of climate data; the decision to release water from dams along the Euphrates river in 2004; the duties of hydro-meteorological services in Azerbaijan; effects of climate change in Turkey and the Mediterranean; and decreasing water levels in Turkey.

Participants addressed, *inter alia*: the need to prepare for the extreme effects of climate change; the importance of interdisciplinary cooperation in mitigation efforts; the potential for establishing a network of national climate services that will improve management of reservoirs and food production; catering for the needs of the world’s most vulnerable; reducing the ecological footprint of humanity; and the potential for Turkey to halve its water consumption and still meet all its water needs.

Panelists also encouraged: engaging with the various stakeholders in drought and flood management to prevent loss of life in Turkey; establishing early warning systems and response capacity to address disasters; recognizing the Southeastern Anatolia Project (GAP) as a good example of sustainable development providing livelihood opportunities and flood protection; and improving climate data and modeling products to provide better seasonal predictions of rain and to provide data that is scaled to time-frames understood by politicians. Participants noted that ways of conserving water include: replacing old irrigation systems with new ones, including a shift from open canal systems to closed-piped and drip irrigation technology and replacement of older distribution networks in urban areas.

During discussions, one participant suggested studying correlations between decreases in water levels and precipitation in Turkey. Others noted: the need to decrease greenhouse gases and promote green sources of energy, especially wind energy; that the energy sector is one of the most active sectors in Europe despite the economic crisis; the validation of ground observations; the need to make data and information available to the general public to facilitate public participation in Integrated Water Resource Management (IWRM); and the importance of considering the unintended ecological consequences of development when making policy decisions.

Participants also suggested that to address climate change in Turkey, the government should: undertake IWRM; draft climate change policies for every sector; consider the relationship between energy and water; undertake short-, medium-, and long-term planning processes; and recognize the role of local governments. They also considered the role of large-scale infrastructure, such as long-distance tunnels and dams in climate change adaptation.



Children at the Forum



L-R: Clarissa Brocklehurst, UNICEF; Pasquale Steduto, Chair, UN-Water; Michael Fink, International Hydropower Association; Daniel Renault, FAO; Akkineni Bhavani Prasad, Confederation of Indian Farmers Association; Peregrine Swann, UK DFID; and Martin Walsh, Global Water Partnership

THEMATIC SESSIONS

ADVANCING HUMAN DEVELOPMENT AND THE MDGs

THEME WRAP-UP: Pasquale Steduto, Chair of UN-Water, introduced the wrap-up session on the four topics under the theme, namely “ensuring water, hygiene and sanitation (WASH) for all,” “water for energy, energy for water,” “water and food for ending poverty and hunger,” and “multiple use and functions of water services.”

Clarissa Brocklehurst, UNICEF, summarized discussions on WASH. She stressed the need for: sanitation advocacy and collaboration on global, national and sub-national monitoring; utility reforms; and urban sanitation learning exchange, including WASH in schools.



Clarissa Brocklehurst, UNICEF

On the topic “water for energy, energy for water,” Michael Fink, International Hydropower Association, said discussions centered on, *inter alia*: technology and sustainability, including ecological footprints; policy strategy and partnerships; the water-energy-climate nexus; the importance of having a sound information base for decision making; and resource-use efficiency.

On “water and food for ending poverty and hunger,” Akkineni Bhavani Prasad, Confederation of Indian Farmers Association, highlighted the importance of: micro-finance mechanisms; integrated approaches for food and energy; and the development of local markets. He noted that “farmers are part of the solution not the problem,” and announced that a draft synthesis report will be made available through the Forum website.

On “multiple uses and functions of water services (MUFS),” Daniel Renault, Food and Agriculture Organization, defined MUFS as a process whereby the same water is used for different uses, functions and services within a given system. He highlighted that MUFS could serve a market of 1 billion people, with high potential returns on both investments and poverty reduction.

Martin Walsh, Global Water Partnership, noted the importance of working across sectors, and Peregrine Swann, UK Department for International Development, stressed that funding must flow where needs are greatest, noting that this is not yet happening. Swann argued that accountability mechanisms for both donors and governments could improve the situation. A representative of the Youth Forum called for more efficient implementation of the MDG on WASH and the recognition of access to water as a human right.

Participants discussed: the question of finance versus technology for improving access to water; the need to close the gap between energy and food production as well as between the scientific community and policy makers; and mutual learning. Johan Kuylenstierna, UN-Water, closed by noting that the focus should be on implementing existing frameworks and better integrating financial issues, including investments beyond 2015.

MANAGING AND PROTECTING WATER RESOURCES WHICH ARE THE OPERATIONAL TOOLS THAT ALLOW ACHIEVING TRANSBOUNDARY COOPERATION AND SOUND BASIN MANAGEMENT?:

Co-chairs Shammy Puri, International Association of Hydrogeologists, and Jean-Yves Grosclaude, French Development Agency (AFD), said the session aimed to identify the operational tools that facilitate transboundary cooperation and sound basin management. They identified three questions for consideration: how to specify the role of official development assistance (ODA) in transboundary cooperation; how to develop sustainable financial mechanisms; and how to achieve financial solidarity for resource provision across basin countries.



L-R: Jean-Yves Grosclaude, French Development Agency (AFD), and co-chair Shammy Puri, International Association of Hydrogeologists

Panel presentations outlined diverse regional experiences in transboundary water management, including: cooperation in the Nubian Sandstone Aquifer System of Egypt, Libya, Chad and Sudan; the GAP in the Euphrates-Tigris basin; and inter-provincial cooperation over the Yangtze River in China. They highlighted efforts to harmonize methodologies for the global classification and mapping of transboundary aquifers.

A second set of panelists offered reflections on operational tools, addressing: the role of third parties in international conflicts; the role of international basin organizations in assisting with sub-national harmonization of governance; the need to allocate benefits from water rather than water itself; the creation of standardized measurement methods and shared databases, using the example of the Water Framework Directive in Europe; the value of progressive confidence-building measures to overcome mistrust, as enacted in projects in Northwestern Europe; dispute resolution mechanisms; inventories of potential transboundary water concerns; plans for mobilizing stakeholders; and capacity building in the Mekong River basin.

During discussions, participants debated whether there is a distinction between “international” and “transboundary” watercourses. Turkish participants stressed the need to manage the Tigris and Euphrates rivers in an equitable, reasonable and optimal manner, but noted that while willing to cooperate, “interference in their affairs” made them uncomfortable. They said dam construction in Turkey will not affect downstream neighbors and will continue even if loans are not forthcoming from international financial institutions. Participants also considered, *inter alia*: finance and ODA to support transboundary management; equitable allocation of water and participation in conservation activities across upstream and downstream countries; and mechanisms to encourage the development of trust among basin stakeholders.

HOW CAN WE BRIDGE THE DIVIDE BETWEEN VARIOUS USERS WHOSE LIVES DEPEND ON COMMON WATER RESOURCES? AND HOW SHOULD WE JUST DO IT!:

László Kóthay, State Secretary of the Ministry of Environment and Water Management, Hungary, and Amb. Muhammad Zamir (Bangladesh), opened the wrap-up of the topic “basin management and transboundary cooperation,” which comprised four sessions.

Summarizing key outcomes from the session on successes and failures of hydro-solidarity, panelists noted that riparian state interactions are based on hydro-sovereignty not hydro-solidarity, and that discussions in the session had addressed whether “international” is equivalent to “transboundary” when referring to water resources.



Young talent at the Forum

On the session addressing stakeholder involvement in basin management and transboundary water cooperation, panelists explained that participants had noted the importance of stakeholder inclusion in transboundary water management and highlighted challenges presented by stakeholder participation including, *inter alia*: motivation to participate; lack of hydro-diplomatic knowledge; and modeling to facilitate common understanding.

On cooperation over transboundary surface and groundwater resources, a session that evaluated tools for the development of sustainable cooperation and the prevention of conflict, panelists summarized key conclusions, including that: there is no common definition for sustainable cooperation; political will and trust are fundamental; legal enforcement frameworks facilitate cooperation; basin-wide approaches are necessary; management must protect aquatic ecosystems; and water treaties should be used as tools to establish joint arrangements and institutions for cooperation. They summarized suggestions on the 1997 UN Watercourses Convention, including calls for its ratification and the establishment of an interim body by the UN Secretary-General to support and promote the Convention.

Summarizing the session on operational tools for enabling transboundary cooperation and sound basin management, panelists presented categories of operational tools that participants had proposed for achieving sustainable cooperation, including: basin management plans; legal and institutional instruments; information systems; medium-term development plans and investment programmes; and funding mechanisms and financial resources.

In the ensuing discussion, differing views were offered on the 1997 UN Watercourses Convention. Some participants said the Convention must be revised and updated prior to its ratification, particularly to reflect environmental concerns and the need for sustainable development. Others opined that the Convention must serve as the basis of international law for transboundary waters. A representative from the Youth Forum called for the inclusion of youth as decision makers. Participants also discussed: successful examples of cost and benefit sharing; the role of third parties in facilitating cooperation; and the importance of confidence building.

Léna Salamé, UNESCO, and Jean-François Donzier, International Network of Basin Organizations, closed the session with a description of the participatory process used to develop this topic and a summary report. They emphasized the need for comprehensive, integrated information and management at the basin level.

THE NEED FOR BETTER MANAGEMENT AND PROTECTION OF SURFACE, GROUND, SOIL AND RAIN WATER:

Hasan Akyar, DSI, said panelists would summarize conclusions from three sessions that contributed to this topic, namely: groundwater; strategic frameworks for effective and sustainable water resources management and protection; and public awareness and stakeholder participation for sustainable water resources management.

On groundwater, Michael Campana, Oregon State University, said participants had stressed that groundwater behaves differently from other water sources and is poorly understood by policy and decision makers. He noted that groundwater use does not require large infrastructure, and that while this can be advantageous, it makes the resource susceptible to exploitation, thus necessitating new forms of governance.



Hasan Akyar, DSI, Turkey

On water resources management, Ari Michelsen, American Water Resources Association, said participants agreed unanimously on the need for IWRM, but not on its definition. He said ground, surface and rain water must be managed together, and that non-renewable groundwater must be incorporated into IWRM. He stressed the need for adaptive management. Nilgün Harmancıoğlu, Dokuz Eylül University, added that scientific solutions will not work unless preceded by appropriate policy frameworks.

On public awareness and stakeholder participation, Peter Mulvihill, International Commission on Large Dams (ICOLD), said participants had discussed the need to, *inter alia*: train the public on the effects of their water-use behaviors; ensure participation at all levels and phases of IWRM; and make meaningful participation a requirement at the statutory level. He noted that they also discussed the need for governments and donors to consult farmers on payment schemes.

During the ensuing discussion, participants focused on problems related to groundwater. They agreed that as an open-access resource, regulation is needed to manage groundwater sustainably. They emphasized challenges related to illegal well construction, transboundary management of shared groundwater resources and the likelihood that climate change will negatively impact groundwater resources.

Participants also noted: an insufficient emphasis on the protection of water and on the linkage between soil protection and water; techniques and technologies for groundwater recharge and rainwater harvesting; the potential of satellite imaging for data collection and monitoring; the need to engage agricultural stakeholders, given extensive water consumption in this sector; the extent to which external actors should engage in internal water-sharing debates; and the potential of self regulation to minimize overexploitation of water resources. They also discussed whether groundwater should be privately or publicly managed.

THEME WRAP-UP: Describing the thematic process, Karin Krchnak, The Nature Conservancy, said “water for environment is water for growth and development,” and stressed the need not only for technical solutions, but also for policy solutions.

Luis Berga, ICOLD, presented outcomes from the topic “ensuring adequate water resources and storage infrastructure to meet agricultural, energy and urban needs.” He underscored that water infrastructure is linked to economic and social development and that experience in infrastructure development over the past century reveals that large water and energy projects can have major social and environmental impacts. Noting the need to integrate the objectives of water

management and conservation of environmental and cultural resources, he stressed that significant attention must be paid to defining environmental flow regimes within river basins.

On the topic “preserving natural ecosystems for water and life,” Mathieu Pinkers, Dutch Ministry of Agriculture, Nature and Food Quality, underscored that ensuring access to knowledge and education is a prerequisite for achieving conservation goals.

Ahmet Sargin, General Directorate, DSI, Turkey, summarized the key issues emerging in discussions on “managing and protecting surface, groundwater and rainwater,” highlighting the need to strengthen links between decision makers and technicians.

Synthesizing the key follow-up issues arising from the thematic sessions, Sibylle Vermont, Federal Office of the Environment, Forests and Landscape, Switzerland, stressed the need to frame the water message in language that policy makers, as well as stakeholders from other sectors, can understand. Concluding, she emphasized the need to move from water to ecosystem management, and proposed that the concept of “hydro-solidarity” become the new organizing framework for action.

Presenting recommendations from the Youth Forum, Ramazan Caner Sayan and Natalia Coibanu emphasized that young people are united in their aim to create a secure future and bridge divides across different cultures, countries and capacities, and called for a greater role in decision making and management of water resources and supply systems. These youth representatives noted that education plays a critical role in empowering young people to live more sustainably, hence there is a need for training and apprenticeship programmes to develop their leadership skills. On their own contribution to the Forum process, they drew attention to a youth internet platform, which will create a market place for matching youth water initiatives with financing opportunities.

With regard to the World Water Forum process, several participants noted a disconnect between the thematic process and the ministerial and local authority discussions at the Forum. Calling this a lost opportunity for exerting political leverage, they proposed that organizers work towards greater synergies at the 6th Forum. One participant noted that “water is a power issue,” and said that the Forum must include the “voices of the voiceless.” On the content of future thematic sessions, participants proposed, *inter alia*: the inter-linkages between population growth and water security; a focus on water-sector reform, not just land reform; and developing guidelines on governing water flows.

EDUCATION, KNOWLEDGE AND CAPACITY DEVELOPMENT

WATER EDUCATION AND SCHOOLS: BRIDGING DIVIDES FOR FUTURE GENERATIONS: Opening the session, John Etgen, Project for Water Education for Teachers (Project WET), highlighted: hands-on solutions for local actions; the role of children in water management; community actions leading to pertinent solutions; and water education as a water-management tool.

Teddy Tindamanyire, speaking on behalf of the Ugandan Minister for Water and Environment, discussed barriers to effective water education, including: the low economic value attached to water; the lack of investment in water safety; “and the fixed mindset of water as a human right and ‘free-for-all’ resource.” In describing the interdisciplinary approach to water

education in Mexico, Heidi Storsburg, CONAGUA, noted that low commitment of educators to teaching water management is a challenge.

Santa de Yonge, Project WET, described Project WET initiatives, including ActionEducation, Discover Floods and a partnership with UNESCO-International Hydrological Programme. She said Project WET education tools are successful because they are interactive, adaptable, contemporary and solution-oriented.

Sabrina Barker, UN Environment Programme, described the “Living on the Edge” youth initiative, highlighting its objectives, namely: awareness raising, knowledge and information sharing; multi-sectoral communication; and connecting different regional perspectives.

Hirokazu Miyao, Center for Supporting Children’s Waterside Activities (CSCWA), drew attention to CSCWA’s work as well as the correlation between “social manners” and “nature experience,” stressing that nature experiences are critical in early childhood development. Şevket Alp, Ministry of National Education, Turkey, highlighted his country’s use of water education, underscoring the importance of water reuse and conservation.

Panelists and participants then discussed, *inter alia*: using native languages to transmit water education messages; cultural considerations in water education; mainstreaming gender; incorporating water education in national curricula; and creating linkages between water and health. They also discussed cultural considerations in water education and water-saving strategies.

USING THE ASSETS OF PROFESSIONAL ASSOCIATIONS AND NETWORKS TO ACHIEVE THE MDGs:

Paul Reiter, International Water Association, opened the summary of three sessions held under this topic. He said broad consensus had emerged that professional associations (PAs) are critical stakeholders in delivering results and sustaining projects on the ground. He highlighted their key support roles in: strategy development; technical assistance; the development of models and systems to enhance efficiency; and brokering, training and capacity development.

Rebecca West, Water Environment Federation, explained that the strategic intent behind the sessions was to build bridges with the mainstream development community and with civil society organizations.

On how to build on the strong spirit of collaboration during the preparatory process and at the Forum, participants highlighted, *inter alia*: building bridges with networks outside the sector, particularly with health and environmental PAs; twinning of strong and weak associations; and reforming PAs’ “elitist” structure through partnerships with rural associations and community-based organizations. Specific examples of new alliances cited included an International Water Association initiative to publish a series on water and sanitation in the medical journal *The Lancet*; and the preparation of a five-year business plan by the African Water Association to promote dialogue with the African Development Bank.

At the close of the session, the convening associations announced they would initiate a legacy project to ensure implementation of the meeting’s outcome.

THEME WRAP-UP: András Szöllösi-Nagy, UNESCO, explained that the theme “education, knowledge and capacity development” had five topics. On the topic “education and capacity-building strategies,” participants noted that water should be part of education curricula and stressed

the importance of local needs assessments and innovative and non-traditional means for communication and capacity development.

A representative of the Youth Forum stated that education is interlinked with the Forum’s other themes and all educational programmes must be gender-sensitive. He highlighted the need for increased financial and logistic support in developing countries and supported the use of the concept of “virtual water,” which considers the amount of water used in the production of goods.

Discussions on “water science and technology: appropriate and innovative solutions for the 21st century to better address the needs of society,” centered on how science and innovation can help to address future water issues. Participants highlighted the need to, *inter alia*: embrace new technologies and explore their full potential; learn from other sectors; and create an imperative for change by working with stakeholders and by developing demand-led projects.

On the topic “using the assets of professional associations and networks to achieve the MDGs,” discussions centered on: bridging perceptions between professional networks and development groups; improving efficiency of development instruments; and showcasing successes and building on progress.

On “data for all,” several participants highlighted: the importance of data collection; the need for an integrated and holistic framework, which includes economic variables; legal and institutional barriers as well as leadership to overcome these barriers and lack of resources; and the potential of the System of Environmental-Economic Accounting of Water for national data collection.

On the topic “water and culture,” participants noted that educators must also be educated and that preconceptions must be deconstructed. Some stressed the need to learn lessons from elders and emphasized that there are as many similarities as there are differences in culture.

Szöllösi-Nagy, closed the session by stressing that investments in water, education, culture and capacity development are “investments in peace.”

AROUND THE VENUE

Oktay Tabasaran, Secretary General of the 5th World Water Forum, thanked Mexican friends for the help they provided in preparing for the 5th Forum having hosted the 4th World Water Forum in Mexico City, Mexico in 2006.



L-R: Estrellita Fuentes, Mexico, and Oktay Tabasaran, Secretary General, 5th World Water Forum