



World Water Council
3rd World Water Forum

Forum Bulletin

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3RD WORLD WATER FORUM HIGHLIGHTS: MONDAY, 17 MARCH 2003

Participants at the 3rd World Water Forum met throughout the day in sessions and wrap-up plenaries on: Water and Climate; Water Supply, Sanitation, Hygiene and Water Pollution; Water and Cultural Diversity; and Water and Energy. Deliberations began on: Water, Food and Environment; Water, Nature and Environment; and Water and Transport. Sessions of the Gender and Water and the Water Journalist Panels were also held. The African Regional Day continued and an award ceremony for the Water Journalists' Competition took place.

WATER AND CLIMATE

CHANGE! ADAPTING WATER MANAGEMENT TO CLIMATE CHANGE:

Ainun Nishat, IUCN, chaired this session. He said the session would launch a report on dialogues undertaken by the IUCN in 2002 on climate change and adaptation. Brett Orlando, IUCN, stated that water management practices must evolve to account for uncertainty arising from climate change. He noted that a planned, top-down approach to adaptation requires significant technical and policy-making capacities, while the alternative approach, autonomous adaptation by companies and individuals, is unlikely to be sufficient. He suggested a "middle-way" based on flexibility and building adaptive capacity and highlighted the need for coalitions of water professionals and other stakeholders.

Jean-Etienne Klimpt, Hydro-Quebec, remarked on the difficulty of planning investments in conditions of uncertainty. Wolfgang Kron, Munich Re, noted the importance of educating all partners in risk reduction, particularly States, affected people and the financial sector. Max Campos, Regional Committee for Water Resources, agreed that adaptation begins with education. Shrikant Limaye, Ground Water Institute, explained the intricacies of watershed management. Peter Spillett, Thames Water, highlighted key water-related issues in the UK, including increased winter run-off and the need to store more water in wetlands and reservoirs. Peter Kerssens, The Netherlands Water Project, indicated the need for a more resilient water system in the Netherlands, but noted that the planning process is complicated by the long time horizons associated with climate change.

Participants discussed the insurance industry's approach to dealing with uncertainty, the role of the private sector in financing adaptation, and the need for public participation. Participants agreed on the need for demand management programmes. Ger Bergkamp, IUCN, then introduced a new panel of regional representatives to deliberate on the role of multistakeholder dialogues in addressing the implications of climate change adaptation for the water sector, and possible future steps including the development of regional adaptation coalitions.

Francis Mkanda, IUCN, outlined the outcome of dialogue discussions in Southern and East Africa and called for the political prioritization of climate change issues. Madiodio Niassé, IUCN, noted the complementary nature of national and regional-level dialogues, particularly when dealing with transboundary issues in

West Africa. Ainun Nishat highlighted that modern agricultural practices are typically less resilient to climate variability than traditional agricultural practices in South Asia. Satoru Oishi, Kyoto University, reviewed the outcome of multistakeholder dialogues held in Japan, underscoring the importance of science and education with regard to climate change adaptation.

Hans Friederich, IUCN, reviewed the main conclusions of dialogues held in Southeast Asia, highlighting the need to bring the views of local people onto the political agenda, and drawing attention to problems caused by perverse economic instruments. Rocio Cordoba, IUCN, outlined the recommendations of the Central American dialogue, including the need to: take into account traditional knowledge regarding adaptation to climate change; include climate change in educational programmes; and involve local authorities, communities and NGOs in flood and drought preparedness programmes. Peter Kerssens underscored the need for increased cooperation between water managers and spatial planners in the Netherlands. Bergkamp concluded the meeting by drawing attention to opportunities for businesses, governments and communities presented by climate change adaptation.

WRAP-UP PLENARY: William Cosgrove, Dialogue on Water and Climate (DWC), chaired this session. Andy Bullock, independent consultant, introduced the session by noting that all possible steps to adapt water systems should be taken, and that developed countries should pay for water development and adaptation in developing countries.

Regarding scientific input, Rick Lawford, NASA, called for an umbrella framework for addressing water and climate issues, and support for the development of better precipitation modeling. On water-cycle research and observational activities, Pavel Kabat, DWC, said participants agreed to develop outreach and data exchange policies, and to encourage collaborative modeling research that includes human and social dimensions.

On adaptation, Madeleen Helmer, International Federation of Red Cross and Red Crescent Societies, said participants agreed on the need to integrate disaster preparedness in sustainable development programmes. Laurens Bouwer, Free University Amsterdam, noted that insurance related financial services could complement other adaptive services, but that the dissemination of financial services in developing countries would be slow. Hans Kleijn, The Netherlands Water Partnership, announced an action plan on funding for capacity building, and a target for achieving a minimum degree of coping capacity in five years. Brett Orlando supported the formation of coalitions that would engage leaders on the need for adaptation. Regarding national action plans, Ainun Nishat noted the need to identify and enhance local coping capacities, and to find creative mechanisms for funding adaptation strategies. On small island countries, Jeffrey Stubbs, Asian Development Bank, said participants identified the need to apply new weather forecasting and hydrology techniques, and create mechanisms for supporting community groups in dialogue with national governments. Regarding floods and droughts, Kenji

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Nakamura, Nagoya University, said participants highlighted the need for international cooperation on meteorological observation, and additional dialogues between stakeholders.

On outreach, Henk van Schaik, DWC, said that members of the International Federation of Environmental Journalists are committed to writing 100 articles on the subject of climate and water annually. On integrated monitoring, Cosgrove read a resolution establishing an NGO with the goal of linking people and organizations concerned about water and climate change. On input to the ministerial conference, Henk van Schaik presented a draft statement on water and climate recommending, *inter alia*, the continuation of multi-stakeholder dialogues and the creation of a water and climate alliance that would build bridges between the two sectors. In closing, Margaret Catley-Carlson, Global Water Partnership, highlighted IWRM as the appropriate framework for advancing progress on water and climate issues.

WATER SUPPLY, SANITATION, HYGIENE AND WATER POLLUTION

WATER, SANITATION AND HEALTH: Organized by WHO and the International Water Association (IWA), this session was chaired by K.J. Nath, All India Institute of Hygiene and Public Health. Opening the session, Jamie Bartram, WHO, addressed the burden of disease and the cost effectiveness of various interventions.

Household water management: Valerie Curtis, London School of Hygiene and Tropical Medicine, underscored the importance of hand washing with soap in preventing deaths and diarrheal diseases. Martin Wegelin, EAWAG/SANDEG, presented on the benefits and limitations of solar disinfection. Robert Quick, Center for Disease Control (CDC), demonstrated how safe water systems (SWS) address diarrheal diseases. Greg Alwood, Procter & Gamble (P&G), described how P&G's household water treatment system can kill bacteria, viruses and reduce heavy metals. Sally Cowal, Public Service International, presented on marketing and distribution of SWS. Bartram invited participants to join the International Network to Promote Safe Household Water Treatment and Storage.

Vector-borne diseases: Felix Amerasinghe, International Water Management Institute, outlined how water management can effectively control malaria. Moses Chimbari, University of Zimbabwe, showed the efficacy of hydraulic designs in controlling bilharzia. Robert Bos, WHO, explained that the burden of water-related diseases can be attributed to how water resources are developed and managed.

Arsenic, fluoride, what's next?: Nath presented on arsenic contamination of groundwater in Asia and Theechat Boonyakarnkul, Thai Ministry of Public Health, outlined the health impacts of, and made recommendations on, addressing fluorosis. Stating that there are too many chemicals to monitor, Hiroki Hashizume, WHO, proposed a risk management-based approach that is holistic, proactive and preventive. He also introduced a new global water quality initiative.

Right to water: Peter Gleick, Pacific Institute for Studies in Development, Environment, and Security, stressed that the human right to water has both moral and legal standing, and urged acknowledgement of this right in the Ministerial Declaration. Nath outlined obstacles to realizing the right to water in developing countries. Joan Rose, Michigan State University, urged all users to ensure water safety for downstream users. Jack Moss, Suez, highlighted the private sector's role in delivering water services. Belinda Calaguas, WaterAid, described how NGOs can assist governments in ensuring the right to water.

SAFE WATER: HOUSEHOLD SECURITY AND QUALITY: This session was organized by UNICEF.

Basic sanitation and improved hygiene: Vanessa Tobin, UNICEF, moderated this theme. Richard Jolly, WSSCC, noted the severe impacts of inadequate sanitation and water supply in cases of HIV/AIDS and times of conflict. Emphasizing that economic growth should not be prioritized above human development, he

said "we cannot sacrifice children on the altar of economic orthodoxy." Alexander Cairncross, London School of Hygiene and Tropical Medicine, noted benefits of sanitation for women and girls' security and access to education. He advocated that subsidies be directed to education, leaving construction to the private sector. Bindeshwar Pathak, Sulabh International, stressed that technological solutions and implementation strategies for sanitation be appropriate to local cultural and environmental conditions.

Household water security and quality: Moderator Robert Quick suggested that the number of people without access to safe water supplies is often underestimated. Ruhakana Rugunda, Ugandan Minister of Water Lands and Environment, highlighted the links between child mortality and extreme poverty and outlined domestic progress and challenges in extending water supply. Jamie Bartram introduced the International Network to Promote Safe Household Water Treatment and Storage. Ryan Herljac, Youth Leader, urged the fulfillment of sanitation-related WSSD commitments. Jonathan Margolis, US State Department, spoke on the marketing and distribution of water purification technologies. Erich Bauman, Swiss Center for Development Cooperation in Technology and Management, highlighted the benefits of low cost and local production of traditional sanitation systems. Peter Lochery, CARE, detailed an application of SWS in Kenya, emphasizing community mobilization as a key factor in its success.

PATHWAYS TO THE PROVISION OF SUSTAINABLE URBAN WATER AND SANITATION SERVICES TO COMMUNITIES WORLDWIDE: This session, organized by the IWA, was chaired by Mark Pascoe, IWA. He outlined priorities for action on water, including: access to water and sanitation; ecological and economic sanitation methods; and sustainable water management in drought and flood-prone areas. Avner Adin, Hebrew University of Jerusalem and the Israeli Water Association, highlighted the uneven quality and distribution of water resources in the Middle East. Stating that each country should develop its own water resources, he outlined available local solutions, including: desalination, reuse, conservation, rain enhancement and stormwater utilization.

Speaking on watershed protection, Joan Rose, Michigan State University, emphasized the need to control-point and non-point sources, and involve multiple agencies, states and jurisdictions. Eugene Cloete, University of Pretoria, stated that many South Africans, particularly those living in rural areas, have no access to safe drinking water and sanitation services, and recommended expanding existing infrastructure with a focus on household water treatment.

Discussion: Participants discussed the applicability and affordability of water treatment options in developing countries, and stressed the importance of public participation in ensuring implementation of household water treatment.

WRAP-UP PLENARY: Richard Jolly and Jan Pronk, former Minister of Housing, Spatial Planning and the Environment, the Netherlands, co-chaired this session. Nane Annan introduced the WASH campaign and encouraged prioritizing hygiene, water and sanitation. In a forwarded statement, Sergio Vieira de Mello, UN High Commissioner for Human Rights, urged explicit reference to water as a human right in the Ministerial Declaration. Participants heard five reports that summarized recommendations and commitments arising from the 21 sessions convened under this theme. Co-Chair Jolly presented the draft conclusions of this issue to be forwarded to the Ministers. Participants requested that these conclusions include reference to, *inter alia*: the poorest of the poor; capacity building; a decisive role for women; household level initiatives; scaling up of projects; and monitoring.

Tomonori Matsuo, Toyo University, stated that participants in the session on wastewater management and water pollution control agreed to, *inter alia*, increasing efforts to mobilize technical and financial resources. Regarding wastewater treatment with effective microorganisms, participants agreed a three-year

sanitation project in Nairobi. Matsuo also stated that participants highlighted the need to evaluate technical characteristics and costs in measures for on-site treatment of domestic water.

On sessions related to water supply, ecological sanitation, and water information, Tetsuo Hayakawa, Azabu University, said participants recommended that the WWC champion the global water agenda and develop global guidelines for water delivery. Participants also recommended a holistic approach to technological choices, called for an initiative to ensure affordable access to water, sanitation and health information, and identified elements for effective cooperation in technologies of supply systems.

Synthesizing the outcomes of sessions related to sanitation and health, Jamie Bartram recommended: strengthening partnerships; strategically targeting resources; mainstreaming sanitation and hygiene; and using the UN's General Comment on the right to water in furthering water and sanitation goals.

Vanessa Tobin reported on technology and urban sanitation related sessions. She urged governments to stimulate demand for sanitation and recognize the importance of sanitation to women. Sessions also highlighted the benefits of ecological sanitation as a low cost and ecologically sound technology.

Darren Saywell, WSSCC, presented a synopsis from four case study presentations. The South African Department of Water Affairs and Forestry shared their experiences in fast-tracking community-based sanitation, stressing skill transfer and sustained health and hygiene. The Japanese National Institute of Public Health emphasized operation and maintenance as key factors for sustainable development of water supply and sanitation in developing countries. The French-based NGO network, PS-Eau, pointed out that communities in many African cities rely on on-site sanitation and have developed appropriate, viable and affordable solutions. They warned against imposition of the pre-conceived ideas of professionals and decision makers on local communities. Saywell then reported from a WSSCC session, emphasizing synergies between the MDGs, advocating household centered approaches, and stressing the need to scale up projects to increase coverage.

South African Minister of Water Affairs and Forestry, Ronnie Kasrils, stressed the importance of moving beyond policy and strategy to implementation, and emphasized the need to scale up supply and sanitation projects.

WATER AND CULTURAL DIVERSITY

INDIGENOUS WORLD VIEWS AND SPIRITUALITY:

This event was presented by the Central America-GWP, Center for Respect of Life and Environment, UN Economic Commission for Latin America, Fundacion Solon, Tebtebba Foundation, UNESCO, and Wageningen University.

Masanori Tyooka, Ainu, Japan, noted that the aquatic environment is central to the behavior and happiness of Ainu peoples. He stressed the importance of the Ainu tradition of giving offerings to the environment. He said the Japanese government has not yet recognized the Ainu as the indigenous peoples of Japan. Jim Wharton, Aboriginal, Australia, noted that national water allocation schemes will have detrimental effects on the indigenous peoples of Australia, and emphasized the need for a coordinated approach to water management by government agencies.

Eleonora Bang-oa, Kankanaey, the Philippines, spoke on traditional Kankanaey water management systems. She explained that equitable water distribution systems have been devised for the dry season. Roy Laifungbam, Meitei, India, said by the eighth Century a system of canals and dykes had been developed by the Meitei to effectively manage scarce water resources. He explained that the increasing deterioration of the Meitei belief system has led to conflicts, flooding and environmental pollution.

Te Tika Matajapo, Cook Islands, stated that indigenous practices are based on three inter-connected pillars: sacredness, respect and spirituality. She recounted a traditional ocean voyage and stressed the need to validate traditional knowledge and traditional science. Jim Enote, Zuni, US, spoke on communicating informa-

tion about water. He explained that indigenous peoples have extensive knowledge on the location of water resources and noted that colonial mapping has limited indigenous peoples' access to water. Tom Goldtooth, Dine' and Mdewakanton Dakota, US, stated that there is a need to re-think humanity's relationship with the planet and observe the principles of human rights. He stressed that all indigenous peoples' lifestyles are threatened and regretted that most indigenous knowledge is not acknowledged by society.

COMMUNITY LIFE AND WATER MANAGEMENT:

This session was convened by UNESCO, the French Water Academy, and the Japan Center for Area Studies. Takeo Ihara, Kagawa University, provided an overview of a project that aims to promote the attractiveness of Shikoku Island by advertising and preserving 88 selected water sites. Alain Henry, France, noted that unsustainable management in developing countries frequently arises from the importation of management procedures that are incongruent with local practices and thinking.

Pham Quynh Phuong, Institute of Folklore Studies of Vietnam, spoke on natural and social aspects of Vietnamese water puppetry. She explained that water puppetry forms part of traditional values and contemporary life, and represents a form of folk knowledge. Houria Tazi Sadeq, Casablanca University, said that ethical and political dimensions of water access should include the rights of future generations and cross-border issues.

Michihisa Suzuki, People's Forum on Water, said that Kyoto is renowned for water because of its associated ancient culture and religion and high quality of drinking water. Ram Kumar Panday, Nepal, highlighted traditional water use techniques and regretted a lack of capital to effectively harness water in Nepal. Kohji Michioku, Kobe University, outlined the restoration of the Chikusa River undertaken in cooperation with local communities, scientists and the government. Roberto Santini, Commune of Siena, presented a historical overview of Siena's water supply system and related architectural constructions. Guoqing Ma, Beijing University, spoke on water management in nomadic Mongolian and traditional agricultural communities. Sibiri Badoun, Burkina Faso, outlined the role and functions of water in African community life. He noted that water plays a prominent role in traditional rituals, and expressed regret that valuable water-management practices are being lost with the continued erosion of traditional belief systems.

WRAP-UP PLENARY: Presentations: John Selborne, UNESCO Commission on the Ethics of Science and Technology, said that issues raised during discussions on water and cultural diversity included the role of traditional peoples and educational programmes in water management. He suggested that factors contributing to best practice in ethical water management include participation, transparency and accountability.

Takaya Kawabe, ArTech & United Nations University, outlined the Kids' ISO 14000 Programme, which aims to teach environmental management methodologies to children. He said the Programme has increased environmental awareness among children and their families, and reduced carbon dioxide emissions. Jean-Pierre Cabouat, French Water Academy, noted discussions affirming water as a common good that is central in social organization, and is both the object and subject of culture.

Session Reports: Martin Reuss, UN Army Corps of Engineers, highlighted that pre-Forum session papers recognized the need to identify appropriate water management technologies and acknowledged that technologies are a social construct. Regarding translating the cultural dimensions of water into action, David Moose, University of London, said participants highlighted the cultural qualities of water and its use as an educational topic.

Reporting on water management and cultural heritage, Masami Kobayashi, Kyoto University, called for preventing further losses of cultural heritage related to practical water management practices, which can contribute to disaster prevention.

On indigenous world views, Joji Cariño, Tebtebba, said participants had illustrated the diversity of indigenous cultures and reviewed traditional peoples' sustainable water and land manage-

ment practices. Regarding community life and water management, Julia Böller, French Water Academy, highlighted the importance of adapting water management practices to specific cultures, as they constitute distinct systems of knowledge and behavior. Alberto Sadamando, International Indian Treaty Council, stated that recommendations emerging from the session on indigenous water vision and rights, stressed that governments, transnational corporations and trade organizations should understand all cultural dimensions of water, and that indigenous peoples should be involved in decision-making processes.

Concluding Remarks: Jean-Louis Oliver, French Water Academy, noted the importance of culture in determining the collective behavior of communities towards water. He stated that culture is fundamental to protecting water resources, underscoring the role of indigenous peoples and women in water management. Andras Szöllösi-Nagy, UNESCO, emphasized the importance of reminding ministers that culture is the most fundamental aspect in water-resource development and management and therefore must fully be taken into account both in the development and management phases of water management schemes.

WATER, NATURE AND ENVIRONMENT

OPENING PLENARY: This session was organized by IUCN and UNEP. Chair Steve Halls, UNEP, said discussions should be solution-orientated and realistic. L.C. Ibe, Permanent Secretary of the Nigerian Federal Ministry of Water Resources, said water is a commodity that has been, and will continue to be, central to development. Delmar Blasco, Ramsar Convention, highlighted the need to ensure full and honest recognition of the environmental dimension of water. He said the current draft Ministerial Declaration has failed to recognize this dimension, and called on participants to influence the final Declaration. He stressed the importance of the Ramsar Convention's guidelines for the allocation and management of water for maintaining the ecological function of wetlands and proposed that they be adapted to other water systems. Noting the importance of the water-related MDG's, Ger Bergkamp, IUCN, stressed the need to consider the environmental impacts of increasing water supply and sanitation on ecosystems, and identified several priorities: compensating the upstream poor; maintaining environmental flows; and empowering and reducing the vulnerability of the poor.

Discussion: Participants stressed the importance of information exchange among stakeholders, and of an ecosystem approach to protect ecosystems for promoting basic development needs. Setting environmental criteria for financing water projects was also highlighted. Several participants noted the need for interaction and cooperation between different water-related conventions, and the application of ecological economics for valuing water.

WATER MANAGEMENT IN MOUNTAINOUS AREAS: This session was jointly organized by UNESCO's International Hydrological Programme (IHP) and the Man and the Biosphere (MAB) Programme. Session Chair Andras Szöllösi-Nagy, IHP, noted the WSSD's recognition of the importance of water resource management in mountainous areas. Bruno Messerli, Swiss Agency for Development and Cooperation, addressed the hydrological significance of mountains, referring to them as "water towers of the world." Dipak Gyawali, Nepalese Minister for Water Resources, highlighted the essential elements of water resource development in the Himalayas, including public dialogue, good governance, regional cooperation, and the judicious use of foreign aid. Thomas Schaaf, MAB, said mountains are particularly fragile environments, making them ideal for studying the impacts of climate change. Hans Schreier, University of British Columbia, highlighted an initiative to link communities in remote mountainous regions using information technology.

Peter Jansson, University of Stockholm, said glaciers represent an important storage point for water. He said that as a result of glacier retreat, runoff is increasing and water storage in glaciers is

decreasing, affecting the drainage basin. He pointed to strong coupling between climate and long-term water storage. On the management of freshwater resources in the Himalayas, Suresh Chalise, International Center for Integrated Mountain Development, outlined factors affecting freshwater availability in mountains, including: a shift in the snow line; air pollution; climate change; and more frequent extreme events. Noting that domestic water supply is principally the responsibility of women, he pointed to the impacts of reduced water availability on women.

Japheth Onyando, Egerton University Njoro, spoke on the environmental impacts of human intervention in African highlands. He noted the role of highlands as water catchment areas, and said agriculture and livestock farming in the highlands affect water quantity and quality, recharge levels, erosion and sedimentation, and biodiversity. Peter Torrekens, FAO, reported on actions taken during the International Year of the Mountains (2002).

Discussion: Participants stressed opening confidential data archives on hydrology for research purposes, and working on transboundary water basin issues.

ENVIRONMENTAL FLOWS, RESOURCES FOR THE FUTURE: This session, organized by IUCN, was chaired by Torkil Jøneh Clausen, GWP. John Scanlon, IUCN, presented a summary of IUCN's draft guide on implementing environmental flows. He stressed that environmental flows should address quantity, quality and timing, and noted that these are only one component of a catchment management approach. Washington Mutayoba, Tanzanian Ministry of Water and Livestock Development, identified several challenges with regard to awareness raising, financial resources and the need for a multidisciplinary approach to implementation. Pech Sokhem, Mekong River Commission, highlighted the need to maintain both minimum and maximum environmental flows. Jamie Pittock, WWF, said that the ultimate environmental flow is a free-flowing river and stressed that the guide can be used to implement the Ramsar Convention and the recommendations of the WCD. He noted a concern that the draft Ministerial Declaration does not adequately address these issues. Mikiyasu Nakayama, Tokyo University, highlighted the need to apply relevant articles of the UN Convention on the Law of the Non-navigational Uses of International Watercourses. Brian Richter, The Nature Conservancy, presented a case study on restoring environmental flows in the Green River in Kentucky, US. Angela Arthington, Griffith University, presented a case study on flow restoration and the protection of Australian rivers.

Discussion: Several participants raised concerns that the focus was on environment rather than providing flows for social needs, and stressed the need for a common definition of environmental flows. One participant opposed the concept of maintaining free-flowing rivers. In their concluding remarks, presenters focused on the vast experiences in managing environmental flows, monitoring restoration projects, the need for simple methodologies to address fisheries, assessing the predictability of flows, and achieving adequate financing.

THINGS TO LOOK FOR TODAY

ISSUES: Water and Cities, Water and Information, and Groundwater will be opening in Osaka today. Water and Governance, and Floods will be opening in Kyoto. Water, Food and Environment; Water, Nature and Environment; and Water and Transport will be continuing in Kyoto.

TOPICS: The dialogue on Public Private Partnership opens in Osaka.

MAJOR GROUPS: The Youth World Water Forum will be held today in Kyoto.

REGIONAL DAY: The Regional Day today is Asia and Pacific.