



The
Federal Government

INTERNATIONAL
CONFERENCE
ON FRESHWATER

BONN 2001

3-7 December 2001

Conference Report



Water – a Key to Sustainable Development

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Nature Conservation and Nuclear Safety
The Federal Ministry for Economic Co-operation and Development

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Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety



Federal Ministry
for Economic Cooperation
and Development

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I. INTRODUCTION

I.1 Foreword



*Heidemarie Wieczorek-Zeul,
Federal Minister for Economic
Co-operation and Development*



*Jürgen Trittin,
Federal Minister for the Environment,
Nature Conservation and Nuclear
Safety*

The German Government hosted the International Conference on Freshwater in Bonn from 3 – 7 December 2001 in close co-operation with the United Nations. With this Conference Germany hoped to contribute to the solution to global freshwater problems and to support preparations for the World Summit on Sustainable Development in Johannesburg in 2002 and the Third World Water Forum in Kyoto 2003.

The need for action is more urgent than ever. Water is a key resource for a sustainable development and for a just and more peaceful world. The Declaration adopted by the ministers states: "Safe and sufficient water and sanitation are basic human needs." When the poor have no access to water, it denies them the decent standard of living to which they are entitled as a human right. Water is also crucial for our environment.

A key question for the Conference was what needs to be done to reach the development target set by the United Nations Millennium Assembly: "To halve, by 2015, the proportion of people unable to reach or to afford safe drinking water." We know better now what it takes to reach that target, how much we need to expand infrastructure, how much money we need to finance it.

Good, professional, integrated water resource management is important and we need to work hard on all levels and in the various sectors to improve it. But this is not enough. Providing water security is a key dimension of poverty reduction. This is the over-arching goal for our international co-operation. The outcome of the World Summit on Sustainable Development must include decisive action on water issues.

The Conference developed Recommendations for Action in three important cross-sectoral areas: governance, management and partnerships; mobilising financial resources; capacity building and sharing knowledge. "The Bonn Keys" point to the main areas of necessary political attention, thus making them more substantial for the public. What we need is awareness – political awareness as well as public awareness to meet the water security needs of the poor.

The German government was pleased to host this Conference. We thank all participants for their hard work and commitment and the true spirit of co-operation. It is they who have made the Conference a success. The outcome is truly a remarkable achievement which will not only influence the World Summit on Sustainable Development, but hopefully also bring the world closer to water security.

Heidemarie Wieczorek-Zeul
Federal Minister for Economic
Co-operation and Development

Jürgen Trittin
Federal Minister for the Environment,
Nature Conservation and Nuclear Safety

I.2 Conference Record

OPENING SESSION

Jürgen Trittin, Germany's Federal Minister for the Environment, Nature Conservation and Nuclear Safety, and Uschi Eid, Germany's Parliamentary State Secretary, Ministry for Economic Co-operation and Development, opened the International Conference on Freshwater on Monday, 3 December.

In his opening speech, Jürgen Trittin, who with Uschi Eid served as Co-Chairs, urged delegates to take action, voicing support for a "global pact" for sustainable development. He emphasized the need for partnership with industry, stated that inadequate water quality or quantity adds to refugees and conflict, and called for the implementation of the Kyoto Protocol.

Co-Chair Uschi Eid, called for practical tools for implementation of past international agreements, emphasizing that 1.2 billion people lack access to safe water, while 2.5 billion lack decent sanitation. She underscored the needs of women and children, calling access to water a fundamental human right. She concluded by bridging the concepts of peace and sustainable development, noting that the terrorist attacks affect security and prosperity.

Pia Heckes, Deputy Mayor of the City of Bonn, welcomed delegates to the City of Bonn, highlighting the city's important role in the international community.

In his keynote address, Nitin Desai, Secretary-General of the Johannesburg Summit, described water as a "strategic resource", highlighting the importance of the Johannesburg Summit, and stressed the need to connect issues of resource management and poverty. He underscored the links between the Johannesburg Summit, the Fourth World Trade Organization Ministerial Conference in Doha, and the International Conference on Financing for Development in Monterrey, referring to the three conferences as a test of multilateralism.

Klaus Töpfer, UN Environment Programme (UNEP) Executive Director, highlighted the importance of water in all sectors of social and economic development, poverty eradication, and cultural diversity, noting the relationship between water and energy issues. He urged „global co-operation," and called for the Johannesburg Summit to be a „summit of implementation not of declaration."

Maria Mutagamba, Uganda's Minister of State for Water, stated that this Conference should chart the way forward, calling for a critical review of public funding and assessment of market distortions. She emphasized the role of women and the need for regional co-operation to achieve access to safe water and sanitation.



From left to right: Nitin Desai, Klaus Töpfer, Pia Heckes, Jürgen Trittin, Maria Mutagamba and Uschi Eid at the end of the Opening Session.



Musical entertainment at the Plenary.

MULTI-STAKEHOLDER DIALOGUE

Two Multi-Stakeholder Dialogue (MSD) Sessions were held on Monday afternoon, 3 December on equitable access and sustainable supply of water for the poor, and on Tuesday morning, 4 December, on strategies for sustainable and equitable management of water resources. The sessions were co-chaired by Jürgen Trittin and Uschi Eid

(Germany), and facilitated by David Hales, Councillor, United Nations Environment and Development Forum (UNED-Forum). This dialogue initiated discussion and enriched conference outputs, by raising issues and suggesting directions and actions, which were summarised in the MSD Conclusions, to be shared with all participants.

EQUITABLE ACCESS AND SUSTAINABLE SUPPLY OF WATER FOR THE POOR:

Participants heard presentations on the themes of partnering with the private sector and its alternatives, making decisions participatory, and preventing corruption.

In the opening presentations, a representative of Business and Industry stressed: creating an

enabling environment, fostering partnerships, and valuing water. Calling for water access to combat poverty, a representative of Farmers urged local entrepreneurship, empowerment of women, investment in infrastructure and appropriate technology; and capacity building. A representative of Workers and Trade Unions stated that pub-



HRH Prince of Orange is addressing the Delegates of the MSD.



The Major Groups' Delegates had intensive discussion with their colleagues from Governments and UN and International Organisations.



The Citizen's Corner gave the Conference participants the chance to exchange views.



The Beethoven Orchestra of Bonn plays the Pastorale Symphony by Ludwig van Beethoven.

lic-private partnerships do not reflect the needs of poor people, and urged investment in public systems. The representative of Farmers elaborated upon the water challenges and the potential global effects of climate change. Underscoring the state as guarantor of water access, he noted reluctance among farmers for water privatisation. The NGO representative stressed inter alia prioritising small-scale, community-led projects, pricing water without seeking full-cost recovery, and following the guidelines of the World Commission on Dams.

In subsequent discussion, participants touched on the roles of donors and States, issues of trans-boundary watercourses, the displacement of people by large hydro-modifications, and the benefits of private sector financing and knowledge. Sweden proposed targeting official development assist-

ance (ODA) for water, with others urged targeting ODA for capacity building to level the playing field for negotiations between industry, communities, and local governments. The Gender and Water Alliance called for training for women and allocating some ODA to gender initiatives. The Business and Industry representative called for transparent regulatory frameworks, codes of conduct, locally-appropriate models, and knowledge transfer. Some expressed doubt in private partnerships, urging wider participation in decision making, reduced donor pressure, and greater investment in public utilities. Noting the problem of corruption in large projects, some urged greater co-operation between agencies and governments, and greater accountability and transparency. Others called for criminalisation of bribery, and proposed developed and developing country government responsibilities in this regard.

DEVELOPING STRATEGIES FOR SUSTAINABLE AND EQUITABLE MANAGEMENT OF WATER RESOURCES:

In their opening presentations, a representative of Business and Industry urged treating water as an economic good, calling for measurable targets to attract finance, technology and knowledge sharing, and urging governments to ensure affordable water for the poor. Speaking on behalf of Farmers, one representative recommended clear water codes, and their involvement in infrastructure maintenance. Supporting biotechnology, he urged citizen-driven research and called for disaster insurance. A representative of Local Authorities illustrated the role of localities in effective water management through optimisation of municipal operations, fostering community dialogue, and initiating catchment planning at different scales. A representative of NGOs stressed prioritisation of small-scale, community-led projects, and underscored the need to separate private sector involvement from international funding conditionalities and to exclude water from international trade negotiations. The Workers and Trade Unions representative described water as a natural monopoly distorted by privatisation, and urged regulating international financial institutions (IFIs), proposing

mobilization of additional financing for water infrastructure from IFIs and union pension funds.

In the ensuing discussion, many participants emphasized the need for capacity building, participatory decision making, incorporating local knowledge, and creating enabling environments. Integrated Water Resource Management (IWRM) was extensively discussed, as was the issue of water management for the farming sector, which uses a large portion of water resources. Distinctions between water pricing and sale were made, with Iraq regarding water sale as unacceptable. Several delegates called for appropriate water pricing. France, Namibia, and the African Development Bank recommended state-managed commercialisation of water provision and management. Business and Industry proposed a multi-stakeholder review of water service provision models, and suggested that governments raise ODA and build capacity among governments and regulators. Denmark recommended a framework, similar to the Århus Convention, to enhance public participation in water issues, while Yemen suggested allowing states that depend on multilateral financing to establish their own conditionalities.

Festive Inauguration

The Festive Inauguration of the International Conference on Freshwater was arranged in the style of the German Christmas Market, with buffets and Santa Claus visiting. Bärbel Dieckmann, Mayor of the City of Bonn, Heidemarie Wiczorek-Zeul, Federal Minister for Economic Cooperation and Development, and Jürgen Trittin, Federal Minister for the Environment, Nature Conservation and Nuclear Safety, opened the

festive inauguration and welcomed the Conference participants. The festive atmosphere of this evening was created by a classical concert. The Beethoven Orchestra of Bonn played the Pastorale Symphony by Ludwig van Beethoven and the Kamalesh Maitra Ensemble performed meditative Indian music, a Monsoon Raga, which was very much enjoyed by the more than 1,000 guests.

MINISTERIAL SESSION

On Tuesday, 4 December, the ministers in attendance, representing 46 countries, assembled in a half-day closed-door session to consider "Equitable and Sustainable Use of Water Resources" and "Mobilising of Financial Resources

for Infrastructure Investment". In the afternoon, Habibollah Bitaraf, Iran's Minister of Energy, presented the Ministerial Declaration and noted support for the Draft Recommendations for Action.

Declaration

The Declaration states that protection of the world's freshwater resources is a key challenge facing governments, with combating poverty being the main challenge to achieving sustainable development. Reiterating relevant international targets and commitments, the Declaration

suggests concrete actions to address: governance; the role of the international community; capacity building and technology transfer; gender issues; the funding gap; and next steps. The Declaration emphasizes that the Johannesburg Summit must include decisive action on water issues.



The venue of the Ministerial Session in festive atmosphere.

WORKING GROUPS

In order to develop practical solutions for improved management of water resources, three Working Groups discussed the Conference Sub-themes from a cross-cutting perspective, focussing on:

- Governance, Integrated Management and New Partnerships
- Mobilising Financial Resources
- Capacity Building and Sharing Knowledge

Three parallel thematic Working Group sessions

met on Tuesday afternoon, 4 December, and all day Wednesday, 5 December. Each Group considered a number of sub-themes providing the opportunity to review and propose additional actions for the Draft Recommendations for Action, which were circulated prior to the Conference. Reports from each Working Group were presented to Plenary on Thursday morning, 6 December. These outcomes of the Working Groups will be issued as Working Group Reports, while those not reflected therein will be incorporated into the Conference Report.

GOVERNANCE, INTEGRATED MANAGEMENT AND NEW PARTNERSHIPS

This Working Group was co-chaired by Jisong Wu, Director General, Ministry of Water Resources, China, and Rogatien Biaou, Secretary General, Ministry of Foreign Affairs and of African Integration, Benin. Aizaz Chaudhry, Permanent Mission of Pakistan to the United Nations in New

York, served as Rapporteur, Josefina Maestu, University of Alcalá de Henares, Spain, facilitated the Sessions. The Group considered four sub-themes, namely, protection of water resources and ecosystems, infrastructure for the poor, allocation of water, and transboundary waters.

Protection of Water Resources

A keynote presentation by Ger Bergkamp from the Water and Nature Initiative of the World Conservation Unit, IUCN, on IUCN's Vision for Water and Nature, and a case study by Friedrich Barth, European Commission, on the EC's Water Framework Directive, introduced this subject. Bergkamp outlined the trends in issues of freshwater use such as rising insecurity, competing demands, and growing integration of resource management across sectors. He recommended minimum flows for ecosystems, economic evaluation of resources, partnerships and transparency. Drawing from the EC's experience in managing international watercourses, Barth presented principles that could be

used by other countries, inter alia, appropriate incentives, transparency, public participation, and capacity building for administrations.

Discussion centred on ethics and issues relating to the effective protection of water resources. The ethical issues raised include corruption, transparency and participatory decision making. The issues raised in discussions on enhancing water protection include technology options for farming, law enforcement, transboundary impacts of hydro-modifications such as impacts of dams, links between globalisation and privatisation, and water pricing on the basis of either costs or benefits.



Josefina Maestu, facilitator of Working Group A on "Governance, Integrated Management and New Partnership".



Gourisankar Ghosh addresses the Working Group participants.

Infrastructure for the Poor

This topic was introduced through two presentations by Gourisankar Ghosh, Water Supply and Sanitation Collaborative Council, who spoke on the link between infrastructure development and poverty alleviation, and by Kalyan Ray, United Nations Centre for Human Settlements (UNHCS)/Habitat, who examined the challenge of providing infrastructure for the urban poor. Introductory case studies were also presented by: Mukami Kariuki, World Bank, on the role of small scale service providers in urban Africa; Oswald Chanda, Water Supply and Sanitation Council, Zambia, on the experience with water reforms in Zambia; and by Dennis Mwanza, Water Utility Partnership, Cote d'Ivoire, on water and sanitation reform.

The discussion centred on proposals by UK/Sweden, issues of privatisation, and the possibility of crafting universally applicable recommendations for action. The UK/Sweden proposals called for:

Allocation of Water

Introducing the subject, Frank Rijsberman, International Water Management Institute, Sri Lanka, discussed balancing water uses between those of food and nature. He stressed the need to develop national cross-sectoral and basin-level cross-sectoral dialogues that are informed by knowledge and local action. Peter Gleick, Pacific Institute, USA, emphasized prioritising basic and ecosystem needs, treating water as more than an economic good, reorienting water policy from supply to demand, reducing risk from water-related conflicts and collecting and disseminating data.

Transboundary Waters

In the keynote presentation, David Grey, World Bank, emphasized the values of inclusiveness, subsidiarity, shared vision, fairness, equal importance of process and product, and instruments to support the process. Drawing from a case study of the Southern African Development Community (SADC) where 60 percent of the rivers are shared, Thomas Chiramba, UNDP, Lesotho, underscored water as a critical tool for regional integration.

Report of the Working Group

Rapporteur Aizaz Chaudhry presented the Report, in which he highlighted the challenges

a halving by 2015 of both the proportion of people without access to sanitation, and the number of river basins without management strategies; preparation of national water resource plans by 2007; and a review of the priority given to water sanitation by national and international programmes.

Regarding the UK/ Sweden proposals, concerns were regarding included the difficulty of meeting these targets, their value in fostering governance and partnerships, and the challenge of developing and applying monitoring and assessment systems. Regarding privatisation, delegates highlighted differences between privatisation and private sector involvement, consequences of donor conditionalities, constraints in interfacing between stakeholders, and urged consideration of the capabilities of the private sector in developing countries.

Issues raised concerned, inter alia, whether the poor are both willing and able to pay for water, the complexities in valuing water, the relevance of trade regimes to water, the risks in water privatisation, the costs of non-provision of clean water and the non-recognition of successful public sector stories. Suggesting the need to advance beyond "stalemate" in the privatisation debate, some participants called for an assessment of the private sector's performance and public-private partnerships in the water sector before the WSSD.

In the ensuing discussion, delegates noted the importance of transparency, international co-operation, knowledge transfer, and pollution prevention in the management of transboundary waters. Delegates also discussed the feasibility of the UK/Sweden proposal to halve the number of river basins without management plans by 2015.

and recommendations of the Group on each of the topics.

MOBILISING FINANCIAL RESOURCES

The Working Group on Mobilising Financial Resources discussed strengthening domestic public funding capabilities, attracting investment, sustaining operations and investment, and the role of development assistance. These sessions were chaired by Jacobus Richelle, Director General, Directorate General Development at the European Commission, EC, and by Zaal Lomtadze, Georgia's Deputy Minister of Environmen-

Strengthening Domestic Public Funding Capabilities

David Ssebabi, Utility Reform Unit, Uganda, described Uganda's experience with privatisation. He stated that in countries with low incomes, finances for water management must come primarily from governments. Subsidies, restructuring and commercialisation, strengthening financial management, enhancing local regulatory capacities, and preventing resource wastage are essential.

Meera Mehta, World Bank, presented case studies on rural water supply and sanitation in Uganda and India that compared options for financing

Attracting Investment

Opening the session, Rodney Short, Clifford Chance UK, highlighted benefits of private sector investment, including: increased affordability, quality, quantity, and environmental sustainability of water services. Regarding attracting private investment, he stressed transparent regulatory regimes, adequate tariff levels, investment convertibility, and political stability.

Steve Baseby, Thames Water UK, compared private participation in the UK and Chile water sectors, noting that the best structure depended inter alia on economic, historical, cultural, political and institutional factors. To meet multiple public objectives, he urged flexibility in models, a strong legal system and government capacity, a minimum local investment requirement, a river basin approach, and expert advice to governments early in the decision-making and negotiation processes.

Participants discussed the framework conditions for attracting private sector finances, including public acceptance and legal redress; adequate preparation of governments and utilities for negotiations and changing roles; conducting of full option assessments; mobilization of domestic sources of finance; and the usefulness of these reforms in enhancing the performance of public utilities. Also debated were the urban and rural

Sustaining Operations and Investment

Jon Gibbs, PricewaterhouseCoopers, described the range of options for structuring private sector participation. He stressed that tariff increase without service improvement is not politically

tal and Natural Resources Protection, with Jennifer Moore, Head of Sub-Department, Ecosystems and Environmental Resources Directorate, Environmental Conservation Service, Canada, as Rapporteur. Facilitator of this Working Group was Jon Lane, Water and Sanitation in Developing Countries. Participants heard presentations and case studies, followed by discussion in each of the sub-theme sessions.

mechanisms, structuring decentralization, and identified emerging priorities. Informed choices for the rural sector, community-based management, and cost recovery were presented as key to rural water supply.

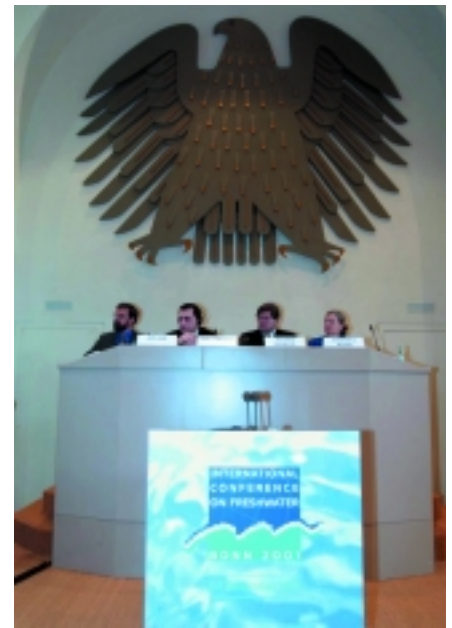
During subsequent discussion, delegates focused on strengthening public finances, allocating investment between competing needs, and attracting private investment. Delegates recommended reporting the work of this group to the International Conference on Financing for Development (FfD) in March 2002.

poor's willingness and capacity to pay, recovery of full cost as opposed to operation and maintenance cost, and alleviating donor and IFI conditionalities favouring privatisation. Delegates identified as needs: stakeholder participation, subsidies and cross-financing for the poor, domestic partnership, and regulatory stability. Recommendations included launching a multi-stakeholder empirical assessment of these issues, sharing lessons learned, and considering downstream consequences during project development.

Participants recognized that the private sector still serves only five to six percent of urban water users despite the growing number of those connected, noting that privatisation can take many forms and allows governments to channel new resources to other needs. One participant raised the potential role of community-based cooperatives for water management.

Stressing that infrastructure ownership is not a pre-requisite for private sector entry, participants urged tailoring solutions to local conditions, and proposed subsidizing rural access through urban tariffs. Some proposed establishing a framework or code of conduct to level the playing field, creating safety nets or minimum water allotments, and promoting transfer of knowledge to local and regional companies.

viable, and that IFIs involvement, government preparation and targeted, time-bound subsidies are important to companies. He recommended progressing gradually from management con-



From left to right: Jon Lane, Zaal Lomtadze, Jacobus Richelle and Jennifer Moore.



AquaMundo – one of the companies, which deal with tomorrow's water and waste water business.



Mike Muller, giving an example of improved water service delivery from South Africa.



The role of Development Assistance is also discussed in Working Group B.



Working Group C focussed on "Capacity Development and Technology Transfer" in their discussions.



The Youth must be given the chance to become water wise resource managers.

tracts to concessions, rather than divesting heavily.

Mike Muller, Ministry of Water Affairs and Forestry, South Africa, noted that with only 0.6 percent of its public budget invested in infrastructure, South Africa had halved the number of people that lacked water access in 1994. This success was based on a complex balance of cost recovery, donor assistance, private sector expertise and mobilization of domestic capital, under government management. He noted, however,

The Role of Development Assistance

B. N. Nawalawala, Ministry of Water Resources, India, urged donors to invest in infrastructure and water use efficiency, mobilize local resources and promote participatory decision-making. Palle Lindgaard-Jørgensen, Danish Environmental Protection Agency, Ministry of Environment and Energy, Denmark, called on donors to incorporate financial planning in goal setting. Noting the lack of international agreements for water, he called for regional co-operation frameworks. John Briscoe, World Bank, highlighted how long-term financing for water infrastructure by donors, including hydropower and irrigation, mobilizes

that this critical level of domestic financing may be lacking in poorer countries with weaker internal capital markets.

In the ensuing discussion, participants agreed that while financial sustainability was necessary, cost recovery should not thwart the access to water and sanitation by the poor. They called for positive examples of public utility reform and urged optimising collection of property taxes and water charges and fostering regulatory capacity to ensure that efficiency gains help the poor.

private capital. He further stated that private sector entry can improve regulation of water utilities, while broad investment in utility reform and resource management can improve water services for the poor.

During the discussion, participants stressed: knowledge sharing, assistance to women, strong domestic financial markets, public accountability for service quality, and the particular needs of economies in transition. They urged engaging in broader development debates, including climate change, benchmarking utility performance and addressing agricultural subsidies.

Report of the Working Group

Jennifer Moore, Environmental Conservation Service, Canada, highlighted in her summarising

report the focal points of discussion in the Working Group on finance.

CAPACITY DEVELOPMENT AND TECHNOLOGY TRANSFER

Chaired by Lars Engfeldt, Ambassador, Ministry of Environment, Sweden, and Claudia Martinez Zuleta, Vice Minister for the Environment, Colombia. Alison Drayton, Policy Advisor, United Nations Development Programme (UNDP), served as Rapporteur, John Soussan, University of Leeds, UK, as Facilitator of this

Working Group, considering education and training, knowledge sharing, effective institutions innovative technology for water efficiency and coping capacity for extreme events. Each session consisted of keynote and case study presentations, followed by discussions on each theme.

Education and Training

Janos Bogardi, United Nations Educational, Scientific and Cultural Organization (UNESCO), drew attention to a recent water education symposium in Delft and presented the overarching priorities of a vision document from the Second World Water Forum, which included raising public awareness especially in rural communities, building capacity for negotiation and conflict resolution, and exploring new media to increase accessibility of information. Bogardi concluded by calling for a new leadership with ethics, fairness, and a willingness to learn, un-learn and re-learn. Ngoni Mudege, Institute of Water and Sanitation, Zimbabwe, described the role of Resource Centres (RCs) in water education. He noted the gap in adaptive capacity to get from well-known problems to well-defined solutions, and stressed the

need for RCs to be able to build their own capacity. Victor Kanu, African Institute of Sataya Sai Education in Human Values, Zambia, called for a human values-based approach to water education, which he described as a cost-effective and proven approach that creates a lasting impact through character development. He underscored how education should both provide information and enact behavioural transformation.

In the subsequent discussions, delegates underscored the importance of adopting the appropriate media for the message, and re-educating bureaucrats and technocrats. Also suggested were transferring knowledge through exchange programmes and virtual universities, educating women on water quality and use, and regarding youth as potential entry points for community education.

Sharing Knowledge

Keynote speaker Arthur Askew, World Meteorological Organisation (WMO), stressed the importance of collecting data to obtain information, create knowledge and attain wisdom for forecasting problems, planning, and resolving conflicts. Describing water as an interdisciplinary challenge, Askew called for global co-operation in sharing wisdom, knowledge, data and resources. Walter Jülich, International Association of Waterworks of the Rhine, presented a case study on Rhine management, explaining how countries overcame the obstacles of disparate cultures,

Effective Institutions

Torkil Jonch-Clausen, Global Water Partnership (GWP), described the roles of water management institutions in formulating policy, allocating water, and managing water quality. In identifying the challenges to establishing effective institutions, he highlighted the need to clarify institutional mandates, gain political acceptance, and build strong leadership. Ingvar Andersson, UNDP, presented a case study on capacity building in African institutions that advocate IWRM. He stated that management systems faced the chal-

Innovative Technology for Water Efficiency

Ralf Otterpohl, Institute of Municipal and Industrial Wastewater Management, Germany, demonstrated how a variety of low- to high-tech, innovative, water re-use technologies can be used to deal with sanitation. He noted that small-scale, low-tech projects often outperform large-scale wastewater treatment plants. S. Rashid, NGO Forum for Drinking Water Supply and Sanitation, Bangladesh, presented a case study on community-based rainwater harvesting in Bangladesh,

Coping Capacity for Extreme Events

Zbigniew Kundzewicz, Potsdam Institute for Climate Impact Research, Poland, gave an update of global and regional climate variability, and illustrated potential strategies for flood protection and management. He underscored the need to improve flood and drought forecasting through a broad range of time horizons, to enhance the ability to prepare for extreme events. In his presentation on helping water managers cope with climate variability, Roberto Lenton, Columbia University, USA, stressed the need to consider the full spectrum of climate events, instead of merely focusing on extreme events. Roberto Lenton further recommended adopting win-win strategies, improving mechanisms for decision making under uncertainty, and building partnerships and strengthening links between water management and climate communities. Chaiyuth Sukhri,

Working Group Report

On Thursday morning, Working Group Rapporteur, Alison Drayton, UNDP, presented to Plenary a

attitudes and expectations through mutual understanding, tolerance, compromise and consensus building. Discussion raised the need to level the resource and information playing field to achieve equitable and reasonable dialogue on water issues.

Delegates suggested a river basin approach to co-operation. Others called for the establishment of additional data centres and programmes for young professional, and underscored the need for capacity retention in addition to capacity building.

allenges of building capacity for new roles and responsibilities, encouraging information flow, and reaching future decision makers.

In the ensuing discussions, delegates emphasized the enhancement of institutional transparency and information exchange, and that good governance, participatory processes, and a consideration of the "human-side" of institutions, exemplified by fair treatment and empowerment, were necessary for creating effective institutions.

concluding that interpersonal communication was the most effective means of generating awareness.

During discussion, delegates suggested creating incentives for government-industry partnerships and promoting entrepreneurship to facilitate technology transfer. In later discussion, participants agreed that targets should consider consumption and land-use patterns, ecological processes and water-use efficiency.

Mekong River Commission (MRC), Cambodia, presented a case study on Mekong river basin management. He elaborated on the MRC's holistic approach, which includes knowledge sharing between member countries, using structural and non-structural strategies, and coordinating national activities with those of upstream partners. MRC's new strategies, he said, sought to improve mitigation and forecasting capability, and enhance mediation and dispute resolution capacity.

Discussions raised the issue of applying the precautionary principle to, and integrating sustainable development with, risk management. Delegates also stressed the need to protect ecosystems to prevent floods, and for governments to address risks facing informal and unplanned settlements.

summary of the highlights and outcomes of the five Working Group sessions.





"Gender, Water and Poverty" was the topic of Barbara Schreiner's keynote address.



Delegates from all countries and organisations are appealed to frankly express their views.



Delegates from China.

INTEGRATING GENDER PERSPECTIVES

On Thursday morning, 6 December, delegates met in Plenary to consider the theme, Integrating Gender Perspectives: Realizing New Options for Improved Water Management. Co-Chair Bärbel Dieckmann, Mayor of Bonn, with Co-Chairs Dianne Quarless, Permanent Mission of Jamaica to the United Nations, and Jon Lane, Water and Sanitation in Developing Countries and Facilitator Jennifer Francis, Gender and Water Alliance, opened the Plenary on gender issues. Participants also heard the report of an informal working group on Gender that worked throughout the Conference to prepare recommendations.

In her keynote address, Barbara Schreiner, Department of Water Affairs and Forestry, South Africa, suggested that addressing gender inequity requires measures to redress historical imbalances in decision making and access and urged mainstreaming gender in development. She called for secure rights and entitlements, non-discriminatory conflict resolution, clear indicators and targets, and programmes of action. Delegates emphasized that women "bear the load of water," and recommended their empower-

ment through education and organization. They proposed national policies, programs that promote equity, and decentralized decision making and recommended gathering gender-specific data, using existing legal instruments, as well as seeking gender balance in World Water Forum delegations and water service provision contracts. Some delegates called for governments to reassess policies for: incorporation of gender perspectives in ecosystem management; equitable sharing of benefits and risks; and reduction of time spent by women collecting water.

Delegates analysed the gender impacts of technologies and policies, and the inequities in representation in decision making and land tenure. They urged: building women's agricultural, scientific, professional and financial capacity; integrating water issues into the UN Convention on the Elimination of Discrimination Against Women; and reporting on the progress made to the World Summit on Sustainable Development and Third World Water Forum in 2003.

BONN RECOMMENDATIONS FOR ACTION

The draft of the Recommendations, which was circulated prior to the Conference, was prepared by Germany with guidance from the Conference's International Steering Committee and circulated among governments and water experts before being put online for public comment. The draft was further revised twice during the Conference to reflect the input of Ministers, Working Groups and proposals of the Gender Plenary Session. The final draft of the Conference Recommendations was presented to Plenary on Thursday afternoon, 6 December.

Conference Facilitator Margaret Catley-Carlson, Chair, Director or Advisor to many international organisations, Canada, divided the discussion of the Draft Recommendations for Action into three sections including: actions in the field of governance, actions in the field of mobilising financial resources, and actions in the field of capacity building and knowledge sharing.

Delegates discussed at length the issue of sharing the benefits of water. They decided to avoid reference to both "transboundary" and "international" in the section on "action in the field of governance", stating that a geographically-based definition should be used, rather than a term with legal implications. Delegates raised concerns over the achievement of targets, including preparing water resource management plans by 2005 and improving sanitation by 2015. They also discussed the primary role of states as water providers. Delegates proposed

additions relating to: minimizing flood damage; managing risks from climate change; establishing joint responsibility for dealing with corruption, including roles for IFIs and bilateral agencies; establishing codes of responsibility; and linking water and health issues. Some delegates also urged deleting reference to the precautionary principle, amending it to read "commercially-viable, efficient, effective, and accountable water provisions."

Addressing "actions in the field of mobilising financial resources," delegates considered investment needs for water infrastructure, debating reduction of harmful subsidies and recovery of costs through user charges. Contention arose over implications for irrigation, and over an apparent contradiction between promotion of cost recovery and ensuring access for the poor. Some delegates called for subsidies to increase water productivity, while others urged attention to water associations in transition economies.

On conditions for attracting private sector investment, participants debated the apparent bias toward "partnerships", while some noted that such conditions would benefit both public and private investment. Participants urged capacity building for regulators and service providers. Delegates differed over the 0.7 percent of GNP ODA target and over earmarking aid for water, but agreed on calling for an end to donor and IFI conditionalities mandating privatisation. There was, however, consensus that

donors should target their funds to mobilize other financial sources.

In discussing "actions in the field of capacity building and sharing knowledge," delegates suggested including references to: traditional media, the role of the media in hygiene and sanitation and the role of Workers and Trade Unions in water education and training. Regarding research and information management, delegates added a provision for data sharing, and replaced "international targets" with the "Millennium Assessment" targets. Many delegates preferred the terms "transboundary waters" – the Agenda 21 language – to "international river basins." Differences emerged over a proposal to move to the governance section, a provision on making water institutions more effective. Other proposed changes included incorporating ethical perspectives, and deleting references to a change of policy and law, specification of the mandate of water institutions, and the call for competitive pay. Debate surrounded the section on knowledge sharing and innovative technologies, as delegates sought clarification of the types and recipients of

Final Text of Recommendations for Action:

The Recommendations for Action are the conference's key contribution to the WSSD, providing measures to close the gap between policy and implementation.

Noting in its introduction that the challenges have been defined, targets described and princi-

technologies. References to the: co-operation of donor agencies and industry, and to the dissemination of technologies based on market processes, were also removed.

Throughout the three themes, delegates debated on the appropriate allocation of roles among people and organizations. Regarding the government role, delegates disagreed on questions of sovereignty, public participation and access to information, but agreement emerged on the need for additional capacity among NGOs and communities, to carry out their roles. On the role of the private sector, discussion focused on the compatibility between profit and environmental and ethical responsibilities. Delegates noted general acceptance of these responsibilities compatible with economic viability, and urged a code-of-conduct for all stakeholders, not solely companies. On the role of the international community, participants limited recommendations to those presented in the Ministerial Declaration, which urges coordination of water issues within the UN system.

ples and policies identified, the Recommendations for Action address actions in the fields of: Governance; Mobilising Financial Resources; and Capacity Building and Sharing Knowledge. It concludes a section on the Roles of people and organizations.

WATER MARKS

The Watermarks-Evening on the 6th of December, was arranged by the private water utilities, Suez-Lyonnaise and Gelsenwasser, and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. In her talk-show, Jacqueline Boyce interviewed the organisers of the International Conference on Freshwater, Dagmara Berbalk, Head of Division, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and Manfred Konukiewitz, Head of Divi-

sion, Federal Ministry for Economic Co-operation and Development (BMZ), as well as Ugandan Minister Maria Mutagamba, Bernd Eisenblätter, GTZ, Jean-Louis Blanc, Ondeo-Suez, Prof. Griepentrog, Gelsenwasser, and Prof. Wenzel, Kunsthalle, Bonn, and pupils from the Friedrich-Ebert-Gymnasium, Bonn.

Good mood was also created by the musicians from the "Schälsick Brassband" and the "Bossa Nova Trio".

CLOSING SESSION

Co-Chair, Heidmarie Wieczorek-Zeul, Germany's Federal Minister for Economic Co-operation and Development (BMZ), opened the final Conference

session, noting that five days of intensive work had born fruitful results.



USA Delegates.



Delegates from Algeria and Angola.



The Conference Organisers, Dagmara Berbalk and Manfred Konukiewitz.



Heidmarie Wieczorek-Zeul acknowledges the fruitful co-operation of the Conference participants.



Margaret Catley-Carlson presenting her summary of the Conference conclusions.

PRESENTATION OF THE CONFERENCE OUTCOMES

Hans-Peter Schipulle, Deputy Director General, Germany's Federal Ministry for Economic Co-operation and Development, presented the Conference outcomes, which suggest ways to reach the Millennium Declaration targets, reduce poverty, realize sustainable development, move from strategy to action, and feed into the WSSD and its preparatory process. He said the Recommendations contain the main conclusions of the Conference, including its side events, but that they are neither negotiated nor binding. They will be presented by Germany to the second session of the WSSD Preparatory Committee in January 2002. The Ministerial Declaration, which was circulated on Tuesday, 4 December, following adoption by 46 Ministers in attendance at the Ministerial Session, provided political guidance to the Conference. He also drew attention to the Con-

ference Issue Paper, which focused on water crises and assessed water and sustainable development links, and was published four months prior to the Conference to set the stage for the Working Groups.

Margaret Catley-Carlson highlighted the shift from a diversity of positions to a consensus on specifics during the Conference. Presenting her summary of the Conference conclusions, entitled the "Bonn Keys" – a one-page précis, she stressed that water can be managed better, that greater access to water and sanitation can be provided, and that disaster vulnerability can be reduced. She highlighted calls for: decentralized management; new partnerships; cooperative arrangements at the water basin level; and stronger governance arrangements. Concluding, she stressed that "we can act, and must."



Edward Lowassa focused the participants attention on the view of 21 African Ministers responsible for water resources.

DECLARATION OF AFRICAN MINISTERS RESPONSIBLE FOR WATER RESOURCES

Edward Lowassa, Tanzania's Minister for Water and Livestock Development, presented the Declaration of African Ministers Responsible for Water Resources, which highlights Africa's major water concerns, the challenges, the international solidarity required and action areas necessary, including, institutionalising intergovernmental policy dialogue, securing finance, building man-

agement capacity, transferring appropriate technology, enhancing governance, and strengthening the role of women. Calling for regional and global alliance for water security for all in Africa, he announced the intention to establish an African Ministerial Conference on Water with its inauguration planned for March/April 2002 in Abuja, Nigeria.

CLOSING

In his closing statement, Jürgen Trittin noted that efficient water management is key to fighting poverty, and called for: good governance; stakeholder participation; and attention to local situations, gender roles, land tenure, and unsustainable consumption patterns.

In a recorded presentation, Kader Asmal, South Africa's Minister for Education, stressed the need for education. Calling for new political commitment, he urged international co-operation, and attention to women and marginalized groups. On increasing water-related investment, he stressed that it depended on values, and cautioned against waiting for crises to erupt. Describing dams as keystones of development and as "white elephants" that displace people, he urged replacing fundamentalism with debate and more accountable decision making, stressing that negotiated outcomes could resolve controversy. Concluding

that "water is the source of life", he urged action "next Monday morning" to target water and poverty, so that people could see the impact of the Conference.

Acknowledging the spirit of respectful dialogue, Heidemarie Wiecezorek-Zeul said in the closing address, water is crucial for peace, human rights, and poverty alleviation, and urged donor countries to meet their commitments. She highlighted actions, including a code of conduct, a multi-stakeholder assessment of private partnerships, an emphasis on gender, and a prominent role for water in the WSSD agenda.

On behalf of the participants, Mike Muller, South Africa, thanked the German Government and the Conference organizers, declaring that through their efforts there were prospects of advancing towards universal water security.



In his moving address, Kader Asmal urged everyone to act and to make a change in water management.

Side Events and Exhibitions

In more than 40 side events and 25 exhibitions, various groups such as private sector, science, bi- and multi-lateral organisations, and civil society presented their contributions towards improved water management.

The spectrum of themes was impressive. It included launching events of new initiatives and campaigns to fight inappropriate water allocation and lack of sanitation. Various dialogues discussed the interrelationships between water and other resources. Several groups dealt with the question, how public-private-partnerships could be arranged for mutual benefits for private investors and civil society, others explained and demonstrated new tools for implementing Integrated Water Resources Management.

Side Events and Exhibitions were highly frequented by the Conference participants, and even Ministers made use of the chance to exchange views and to have bilateral talks. Generally, it was recognised that the programme was very rich and manifold, and the performance in this side programme was very high standard.

The Conference homepage also informed about the Conference programme, arrangements on accreditation and registration and financial assistance to participants. Registration for side events and exhibitions were undertaken via the web page as well as the booking of excursions.



The Secretariat of the 3rd World Water Forum presented their aims and strategies of preparation for this important event in Kyoto 2003.

The Conference Homepage

The Conference homepage (www.water-2001.de) was a major means for achieving maximum transparency in the preparation process.

The Conference Thematic Background Papers and the Draft Conference Issue Paper were published and discussed in a virtual discussion forum. The results of this discussion were used to revise the papers. Submissions to the Conference were also published on the homepage and were considered in the thematic preparation, resulting in the Draft Recommendations for Action.

During the Conference from 3 to 7 December 2001, results and reports were immediately published, so participants and the public were timely informed.

The Conference web pages were highly frequented: In the three-month-period before the Conference, a total of 131,217 pages for 33,332 users was served. During the same period, 46,496 documents were downloaded. During the Conference itself, 55,000 pages were used and about 5,000 documents were downloaded.

Already long before the event itself, the Conference web pages were highly frequented.



Already long before the event itself, the Conference web pages were highly frequented.

(The Conference reporting service was provided by IISD. This Conference Record has made use of a shortened version of their Conference summary (<http://www.iisd.ca/linkages/sd/water/sdh20/index.html>), except for the paragraphs about the Festive Inauguration, the Side Events and Exhibitions and the Watermarks–Evening.)

Original Conference Summary

Sustainable Developments is a publication of the International Institute for Sustainable Development (IISD) info@iisd.ca, publishers of the Earth Negotiations Bulletin®. This issue is written and edited by John Gagain jgagain@unadr.org, Jason Switzer jswitzer@iisd.ca, Prisna Nuengsigkapan prisna@iisd.org and Wagaki Mwangi wagaki@iisd.org. The Digital Editor is David Fernau david@iisd.org. The Editor is Angela Churie angela@iisd.org. The Director of IISD Reporting Services (including Sustainable Developments) is Langston James "Kimo" Goree VI kimo@iisd.org. Funding for coverage of this meeting has been provided by Federal Republic of Germany. The authors can be contacted at their electronic mail addresses and at tel: +1-212-644-0204. IISD can be contacted at 161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba R3B 0Y4, Canada; tel: +1-204-958-7700; fax: +1-204-958-7710. The opinions expressed in the Sustainable Developments are those of the authors and do not necessarily reflect the views of IISD and other funders. Excerpts from Sustainable Developments may be used in other publications with appropriate academic citation. For further information on Sustainable Developments, including requests to provide reporting services, contact the Director of IISD Reporting Services at kimo@iisd.org.

I.3 Programme

Monday, 3 December 2001

10.00 – 12.30 h Opening Session

Opening Addresses: Jürgen Trittin
Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany

Uschi Eid
Parliamentary State Secretary, Ministry for Economic Co-operation and Development, Germany

Welcome Address: Pia Heckes
Deputy Mayor of the City of Bonn

Keynote Speeches: Nitin Desai
UN Under Secretary General, Secretary General of the World Summit on Sustainable Development

Klaus Töpfer
UN Under Secretary General, Executive Director, UN Environment Programme

Maria Mutagamba
Minister of State for Water, Ministry of Water, Land and Environment, Uganda

12.30 – 14.30 h Lunch Break

14.30 – 17.30 h Plenary Session I – Multi-Stakeholder Dialogue A: Equitable Access to and Sustainable Supply of Water for the Poor

Co-Chairs: Uschi Eid
Parliamentary State Secretary, Ministry for Economic Co-operation and Development, Germany

Jürgen Trittin
Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany

Facilitator: David Hales
Councillor, United Nations Environment and Development, UNED-Forum

Presentation of Discussion Papers:
Representatives of Major Groups: Non-governmental Organisations, Local Authorities, Workers & Trade Unions, Business & Industry, Farmers

19.00 h Festive Inauguration

Mahmoud Abu Zeid, Minister of Water Resources and Irrigation, Egypt

Arjun Charan Sethi, Minister of Water Resources, India

09.30 – 12.30 h Plenary Session II – Multi-Stakeholder Dialogue B: Developing Strategies for Sustainable and Equitable Management of Water Resources

Chair: Uschi Eid
Parliamentary State Secretary, Federal Ministry for Economic Co-operation and Development, Germany

Address: HRH Prince of Orange

Facilitator: David Hales
Councillor, United Nations Environment and Development, UNED-Forum

Presentation of Discussion Papers:
Representatives of Major Groups: Non-Governmental Organisations, Local Authorities, Workers & Trade Unions, Business & Industry, Farmers

11.30 – 13.00 h Ministerial Session II – Mobilising Financial Resources for Infrastructure Investment (exclusive)

Chair: Heidemarie Wieczorek-Zeul
Federal Minister for Economic Co-operation and Development, Germany

Co-Chair: Chen Lei
Vice Minister of Water Resources, China

Address: HRH Prince of Orange

Keynote Speeches: Michael Meacher
Minister for Environment, United Kingdom

Ronnie Kasrils, Minister for Water Affairs and Forestry, Republic of South Africa

12.30 – 14.30 h Lunch Break

14.30 – 16.00 h Plenary Session III – Conclusions of Ministerial Sessions and Multi-Stakeholder Dialogues Sessions

Chair: Uschi Eid
Parliamentary State Secretary, Ministry for Economic Co-operation and Development, Germany

Co-Chair: Hazim El-Naser
Minister of Water and Irrigation, Jordan

Conclusions of Ministerial Session

Conclusions of Multi-Stakeholder Dialogue:
David Hales, Councillor, United Nations Environment and Development, UNED

World Water Development Report
Gordon Young, Co-ordinator World Water Assessment Programme, United Nations Educational, Scientific and Cultural Organisation, UNESCO

Introduction to Working Groups
Margaret Catley-Carlson, Conference Facilitator

16.00 – 17.30 h WORKING GROUP A: Governance, Integrated Management and New Partnerships, Schedule Session A I: Protection of Water Resources and Ecosystems

Tuesday, 4 December 2001

09.30 – 11.00 h Ministerial Session I – Equitable and Sustainable Use of Water Resources (exclusive)

Chair: Jürgen Trittin
Federal Minister for Environment, Nature Conservation and Nuclear Safety, Germany

Co-Chair: Habibollah Bitaraf
Minister of Energy, Iran

Keynote Speeches: Kamarou Fassassi
Minister of Mining, Energy and Water Resources, Benin

Chair: Rogatien Biaou
Secretary General, Ministry of Foreign Affairs and African Integration, Benin

Co-Chair: Jisong Wu
Director General, Ministry of Water Resources, China

Rapporteur: Aizaz Ahmad Chaudhry
Councillor, Permanent Mission of Pakistan to the United Nations, Pakistan

Facilitator: Josefina Maestu
Advisor, Department of Economic Theory, University of Alcalá de Henares, Spain

Keynote: Ger Bergkamp
The World Conservation Union, IUCN

Case Study: Friedrich Barth, European Commission, EU

16.00 – 17.30 h **WORKING GROUP B: Mobilising Financial Resources, Schedule Session B I: Strengthen Domestic Public Funding Capabilities**

Chair: Jacobus Richelle
Director General, Directorate General Development, European Commission, EC

Co-Chair: Zaal Lomtadze
Deputy Minister of Environment and Natural Resources Protection, Georgia

Rapporteur: Jennifer E. Moore
Head of Sub-Department, Ecosystems and Environmental Resources Directorate, Environmental Conservation Service, Canada

Facilitator: Jon Lane
Consultant, Water and Sanitation in Developing Countries

Keynote: David Ssebabi, Uganda Utility Reform Unit

Good Practice: Meera Mehta, World Bank WSSP

16.00 – 17.30 h **WORKING GROUP C: Capacity Development and Technology Transfer, Schedule Session C I: Education and Training**

Chair: Lars Engfeldt
Ambassador, Ministry of the Environment, Sweden

Co-Chair: Claudia Martinez Zuleta
Vice-Minister, Ministry of the Environment, Columbia

Rapporteur: Alison Drayton
Policy Advisor, United Nations Development Programme, UNDP

Facilitator: John Soussan
Director, Centre for Water Policy and Development, John University of Leeds, United Kingdom

Keynote : Janosh Bogardi, UNESCO

Case Study: Ngoni Mudege, Institute of Water and Sanitation Development, IWSD

Case Study: Victor Sigismund Kanu
Sathya Sai Education

Chair: Rogatien Biaou
Secretary General, Ministry of Foreign Affairs and African Integration, Benin

Co-Chair: Jisong Wu
Director General, Ministry of Water Resources, China

Rapporteur: Aizaz Ahmad Chaudhry
Councillor, Permanent Mission of Pakistan to the United Nations, Pakistan

Facilitator: Josefina Maestu
Advisor, Department of Economic Theory, University of Alcalá de Henares, Spain

Keynote: Gourisankar Ghosh, Water Supply and Sanitation Collaborative Council, WSSCC

Case Study: Mukami Kariuki, World Bank, Water Supply and Sanitation Programme, WSSP

Case Study: Oswald Chanda, National Water Supply and Sanitation Council, WSSC, Zambia

Keynote: Kalyan Ray, UNCHS HABITAT

Case Study: Dennis Mwanza, Water Utility Partnership, WUP, Cote d'Ivoire

09.30 – 12.30 h **WORKING GROUP B, Schedule Session B II & III: Attracting Investment**

Chair: Jacobus Richelle
Director General, Directorate General Development, European Commission, EC

Co-Chair: Zaal Lomtadze
Deputy Minister of Environment and Natural Resources Protection, Georgia

Rapporteur: Jennifer E. Moore
Head of Sub-Department, Ecosystems and Environmental Resources Directorate, Environmental Conservation Service, Canada

Facilitator: Jon Lane
Consultant, Water and Sanitation in Developing Countries

Keynote: John Gibbs, Clifford Chance

Case Study: Steve Baseby, Thames Water

09.30 – 12.30 h **WORKING GROUP C, Schedule Session C II & III: Sharing Knowledge & Effective Institutions**

Chair: Lars Engfeldt
Ambassador, Ministry of the Environment, Sweden

Co-Chair: Claudia Martinez Zuleta
Vice-Minister, Ministry of the Environment, Columbia

Rapporteur: Alison Drayton
Policy Advisor, United Nations Development Programme, UNDP

Facilitator: John Soussan
Director, Centre for Water Policy and Development, John University of Leeds, United Kingdom

Keynote: Arthur Askew
World Meteorological Organisation, WMO

Case Study: Walter Jülich, RIWA

Keynote: Torkil Jonch-Clausen
Global Water Partnership, GWP

Wednesday, 5 December 2001

09.30 – 12.30 h **WORKING GROUP A, Schedule Session A II & III: Infrastructure for the Poor**

Case Study: Ingvar Andersson
United Nations Development Programme, UNDP

12.30 – 14.30 h Lunch Break

**14.30 – 17.30 h WORKING GROUP A, Schedule Session A IV & V:
Allocation of Water & Transboundary Waters**

Chair: Rogatien Biaou
Secretary General, Ministry of Foreign Affairs
and African Integration, Benin

Co-Chair: Jisong Wu
Director General, Ministry of Water Resources, China

Rapporteur: Aizaz Ahmad Chaudhry
Councillor, Permanent Mission of Pakistan to the
United Nations, Pakistan

Facilitator: Josefina Maestu
Advisor, Department of Economic Theory, University
of Alcalá de Henares, Spain

Keynote: Frank Rijsberman
International Water Management Institute, IWMI

Keynote: Peter Gleick, Pacific Institute, USA

Keynote: David Grey, World Bank

Case Study: Thomas Chiramba
Water Sector Co-ordination Unit, South African
Development Community, SADC

**14.30 – 17.30 h WORKING GROUP B, Schedule Session B IV & V:
Sustaining Operations and Investment & Role of
Development Assistance**

Chair: Jacobus Richelle
Director General, Directorate General Development,
European Commission, EC

Co-Chair: Zaal Lomtadze
Deputy Minister of Environment and Natural
Resources Protection, Georgia

Rapporteur: Jennifer E. Moore
Head of Sub-Department, Ecosystems and Environ-
mental Resources Directorate, Environmental
Conservation Service, Canada

Facilitator: Jon Lane
Consultant, Water and Sanitation in Developing Countries

Keynote: John Gibbs, Price Waterhouse Poopers, PwC

Case Study: Mike Muller, Department of Water
Affairs and Forestry, Republic of South Africa

Keynote: Shri B.N. Nawalawala
Secretary Ministry of Water Resources, India

Keynote: Palle Lindgaard-Jørgensen
Danish Environment Protection Agency, Denmark

Keynote: John Briscoe, World Bank

**14.30 – 17.30 h WORKING GROUP C, Schedule Session C IV & V:
Innovative Technology for Water Efficiency &
Coping Capacities for Extreme Events**

Chair: Lars Engfeldt
Ambassador, Ministry of the Environment, Sweden

Co-Chair: Claudia Martinez Zuleta
Vice-Minister, Ministry of the Environment, Columbia

Rapporteur: Alison Drayton

Policy Advisor, United Nations Development Pro-
gramme, UNDP

Facilitator: John Soussan
Director, Centre for Water Policy and Development,
John University of Leeds, United Kingdom

Keynote: Ralf Otterpohl, University Hamburg

Case Study: S.M.A. Rashid, NGO Forum Bangladesh

Keynote: Zbigniew Kundzewicz
Potsdam Institute for Climate Impact Research, PIK

Keynote: Roberto Lenton
International Research Institute, IRI

Case Study: Jeorn Kristensen
Mekong River Commission, MRC

Thursday, 6 December 2001

**09.30 – 11.00 h Plenary Session IV – Integrating Gender Perspec-
tives: Realising New Options for Improved Water
Management**

Chair: Bärbel Dieckmann
Mayor City Bonn

Co-Chair: Diane M. Quarless
Deputy Permanent Representative, Permanent Mis-
sion of Jamaica to the United Nations, Jamaica

Jon Lane
Consultant, Water and Sanitation in Developing Countries

Facilitator: Jennifer Francis
Executive Secretary, Gender and Water Alliance, GWA

Keynote: Barbara Schreiner, Department of Water
Affairs and Forestry, Republic of South Africa

11.30 – 12.30 h Plenary Session V – Reports from Working Groups

Co-Chairs: Fritz Holzwarth
Deputy Director General, Federal Ministry for the
Environment, Nature Conservation and Nuclear
Safety, Germany

Hans-Peter Schipulle
Deputy Director General, Federal Ministry for Eco-
nomic Cooperation and Development, Germany

Facilitator: Margaret Catley-Carlson

**The preparations for the 3rd World Water Forum,
Kyoto**

Masaaki Nakayasu, Japanese Government

Reports from Working Group A:

Aizaz Ahmad Chaudry
Councillor, Permanent Mission of Pakistan to the
United Nations, Pakistan

Reports from Working Group B:

Jennifer E. Moore
Head of Sub-Department, Ecosystems and Environ-
mental Resources Directorate,
Environmental Conservation Service, Canada

Reports from Working Group C:

Alison Drayton, Policy Advisor, United Nations Devel-
opment Programme, UNDP

12.30 – 14.30 h Lunch Break

14.30 – 17.30 h Plenary Session VI – Presentation and Discussion of Draft Conference Recommendations

Co-Chairs: Fritz Holzwarth
Deputy Director General, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany

Hans-Peter Schipulle
Deputy Director General, Federal Ministry for Economic Co-operation and Development, Germany

Facilitator: Margaret Catley-Carlson

Presentation of Draft Conference Recommendations

Discussion

19.00 – 22.00 h Watermarks – An evening with special guests, talks and music

Friday, 7 December 2001

09.00 – 10.30 h Plenary Session VII – Presentation and Discussion of revised Draft Conference Recommendations

Co-Chairs: Heidemarie Wieczorek-Zeul
Federal Minister for Economic Co-operation and Development, Germany

Jürgen Trittin, Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany

Facilitator: Margaret Catley-Carlson

Presentation of revised Draft Conference Recommendations

Discussion

11.00 – 12.00 h Closing Session – Adoption of Conference Recommendations

Co-Chairs: Jürgen Trittin
Federal Minister for Environment, Nature Conservation and Nuclear Safety, Germany

Heidemarie Wieczorek-Zeul
Federal Minister for Economic Co-operation and Development, Germany

Adoption of Conference Recommendations

Closing Addresses: Heidemarie Wieczorek-Zeul
Federal Minister for Economic Co-operation and Development, Germany

Kader Asmal,
Minister of Education, Republic of South Africa

Jürgen Trittin, Federal Minister for Environment, Nature Conservation and Nuclear Safety, Germany

Side Events

Saturday, 1 and Sunday, 2 December 2001

09.00 – 18.00 h Dialogue Consortium on Food and Environmental Security
Pre-event: Workshop on "National Dialogues on Water, Food and Environment"

16.00 – 17.00 h Dialogue on Water and Climate – Launching Event UN Environment Program (UNEP)/ UN Centre for Human Settlements (UNCHS) The New Partnership for African Development, Key Challenges in the Context of Freshwater Management

Monday, 3 December 2001

13.30 – 16.30 h Water Supply and Sanitation Collaborative Council (WSSCC)
On the Road to Johannesburg: Putting Water and Sanitation on the Top of the Political Agenda

16.00 – 17.00 h EU Commission
The Water Framework Directive of the European Union

17.00 – 18.30 h Dialogue Secretariat
Dialogue on Water, Food and Environment
Presentation on National/Basin Dialogues and Portfolio of Activities

Tuesday, 4 December 2001

12.30 – 13.30 h Ministry of Foreign Affairs, Sweden
Financing Transboundary Water Management

12.30 – 14.30 h Partnering for sustainable water supply and sanitation – a joint initiative between multi-sector partners in the UK and Africa
Partnering: Reality or Rhetoric?

12.30 – 14.30 h IUCN – The World Conservation Union
Water and Nature Initiative

12.30 – 14.30 h University of Witten/Herdecke, Germany
Rapid Development of the Water Sector in the New Federal Laender

13.30 – 14.30 h Global Environment Facility (GEF)
A Decade of GEF Experiences on Transboundary Waters

15.30 – 17.00 h Dialogue on Water and Climate

17.30 – 19.30 h Ramsar Convention on Wetlands
Integrated Management of Wetlands and River Basins

17.30 – 19.30 h Africa Water Forum
Comparative Review of Water Policies in Africa

18.00 – 20.00 h Karl-Kübel-Foundation, Germany
Water for Life – Panel Discussion, Solutions for Competing Freshwater Use in Rural South Asia

18.30 – 20.00 h Global Water Partnership (GWP)
Launching Event GWP:
Presentation of "ToolBox"

20.00 – 22.00 h The International Secretariat for Water (ISW), Water Supply and Sanitation Collaborative Council (WSSCC), FAKT Consult for Management Training and Technologies
Citizen Evening

Wednesday, 5 December 2001

- 09.00 – 12.00 h **International Secretariat for Water (Canada), Barefoot College (India)**
Rainwater Harvesting for Drought Proofing Villages in Developing Countries
- 09.30 – 12.30 h **Global Water Partnership (GWP)**
Workshop: GWP-ToolBox
- 09.30 – 12.30 h **UN Educational and Scientific Organisation (UNESCO), Green Cross International**
From Potential Conflicts to Co-operation Potential in Transboundary Water Management
- 12.30 – 15.00 h **GTZ – Deutsche Gesellschaft für Technische Zusammenarbeit GmbH**
Ecological Sanitation – Closed-Loop Approaches in Wastewater Management and Sanitation
- 12.30 – 14.00 h **Ministry of Land, Infrastructure and Transport (Japan)**
Guidance Meeting for the Ministerial Conference, The Third World Water Forum
- 12.30 – 14.30 h **Overseas Development Institute (ODI), Intermediate Technology Development Group (ITDG)**
Secure Water: Building Sustainable Livelihoods for the Poor into Demand. Responsive Approaches
- 12.30 – 14.30 h **Carl Duisberg Association (CDG), Section for Protection of Environment and Natural Resources (Germany)**
Training on Water, Waste Water and Solid Waste Management in Palestine 1995-2001. An Overview
- 13.15 – 14.15 h **Kreditanstalt für Wiederaufbau (KfW)/Deutsche Entwicklungsgesellschaft (DEG), Germany**
Options for Financing of Water Projects – Presentation from Good Practice Projects from KfW Group
- 13.30 – 14.30 h **German Foundation for International Development (DSE-ZEL)**
Management of Land, Forest and Water Resources in Laos and Vietnam
- 14.00 – 17.00 h **World Water Council (WWC) and Institut de la Gestion Déléguée**
Public-Private Partnership in Water Management
- 17.30 – 19.30 h **German Foundation for World Population (DSW)**
Bringing Rio to Life – dealing with resource conservation, poverty reduction and population growth in an integrated manner – a case study from Nepal
- 17.30 – 19.30 h **Estonian Russian Transboundary Water Commission/Peipsi Center for Transboundary Co-operation/MANTRA East Project Consortium**
Presentation of Lake Peipsi Basin Management Program
- 17.30 – 19.30 h **International Water Association (IWA/London)**
Results from the International World Congress on Water, 15 to 19 October 2001
- 17.30 – 19.30 h **Forum Umwelt und Entwicklung, Netzwerk Unser Wasser, Hamburger Wasserwerke, World Wide Fund For Nature (WWF), BUND, Grüne Liga**
Water for Human Needs – in Accordance with Natural Ecosystems. Preserve Water Services in Public Responsibility
- 17.30 – 19.30 h **Médecins sans Frontières (MSF)**
The Aral Sea – An Environmental Disaster

Thursday, 6 December 2001

- 12.30 – 14.30 h **Secretariat of the 3rd World Water Forum**
From Bonn to Kyoto – World Water Forum – Kyoto
- 12.30 – 14.30 h **VIVENDI Water, Germany**
The alternative ways of water supply in Metro Cebu, Philippines
- 12.30 – 14.30 h **Global Nature Fund (GNF)**
Living Lakes – Presentation of transferable examples of sustainable water management from partner regions of the international Living Lakes network
- 12.30 – 14.30 h **Water Aid**
Private Sector Participation in Water and Sanitation: Will It Benefit the Poor? – Presentation of Case Studies from seven Developing Countries
- 12.30 – 14.30 h **International Council for Local Environmental Initiatives (ICLEI)**
Local Government Panel on Urban Governance Issues related to Integrated Water Resources Management
- 12.30 – 14.30 h **Berlinwasser Holding AG, Germany**
Good Practices' Showcase: Windhoek, Namibia – a Public Private Partnership for the Reclamation of Water
- 14.30 – 16.30 h **Zentrum für Entwicklungsforschung (ZEF), Germany**
Research insights and challenges for sustainable, efficient and fair water use
- 15.30 – 17.00 h **Karin EBER ART Projects, Heike Strelow ART Projects**
A cultural-theoretical perspective on the sustainable treatment of the natural resource WATER. Illustrated by artistic examples.
- 17.30 – 19.30 h **Sachsenwasser GmbH, Kommunale Wasserwerke Leipzig**
Protecting Water Resources – Examples of Co-operation between Waterworks and farmers: the Wassergut Canitz Ltd.
- 17.30 – 19.30 h **European Chemicals Industry Council (CEFIC)**
Responsible Care Contribution / Concepts of the host region

Thursday, 6 December 2001

- 09.00 – 11.00 h **Ministry of Environment, Nature Conservation, Agriculture and Consumer Protection (MUNLV), NRW, Germany**
Side-Event 1 – River basin management – Presentation of examples of an Integrative Concept
- 11.00 – 13.00 h **Ministry of Environment, Nature Conservation, Agriculture and Consumer Protection (MUNLV), NRW, Germany**
Side-Event 2 – Water supply and water treatment – Know-how-transfer, experience from implemented projects – evaluation and outlook
- 14.30 – 16.30 h **Ministry of Environment, Nature Conservation, Agriculture and Consumer Protection (MUNLV), NRW, Germany**
Side-Event 3 – Water usage and wastewater disposal concepts – Restructuring of the wastewater disposal in industrial and rural areas

Exhibitions

ATV-DVWK Deutsche Vereinigung für Wasserwirtschaft, Abwasser und Abfall e.V.

Wastewater, Waste and Water Management

Global Environment Facility (GEF)

GEF Global Action on Water

German Advisory Council on Global Change (WBGU)

World in Transition – Ways Towards Sustainable Management of Freshwater Resources

Federal Institute for Geosciences and Natural Resources (BRG)

Responsibility on Groundwater Resources – a need for Sustainability Subjects

MISEREOR e.V.

Rural water experience from partners

AquaMundo GmbH

AquaMundo: Water – Our Future

GEG-Werbung / Energiesparverband Österreich

Water Globe Award 2002

Dialogue on Water and Climate/International Geosphere – Biosphere Programme (IGBP), International Human Dimensions Programme on Global Environmental Change (IHDP), World Climate Research Programme (WCRP)

Water in a World of Change

Kreditanstalt für Wiederaufbau (KfW)/Deutsche Entwicklungsgesellschaft (DEG), Germany

Financing Water Projects

World Chlorine Council/Global Vinyl Council

Drop of Life: Delivering Safe Water to the World

World Water Assessment Programme (WWAP)

Governing Water Wisely

Global Water Partnership (GWP)

IWRM ToolBox

Center for Development Research (ZEF), Bonn, Germany

GLOWA-Volta: Sustainable water use under changing land use, rainfall reliability and water demands in the Volta Basin

Secrétariat International de l'Eau

Citizens' Corner

Ministry of Environment, Nature Conservation, Agriculture and Consumer Protection of the state of North Rhine-Westphalia

Pavilion of the hosting region North Rhine-Westphalia

Solar Application

UFZ-Umweltforschungszentrum Leipzig-Halle GmbH

Wastewater Treatment in Constructed Wetlands

Global Runoff Data Centre (GRDC)

The Global Runoff Data Center

Secretariat of the 3rd World Water Forum

The 3rd World Water Forum

Emschergenossenschaft/Lippeverband

Waste-Water Experts & River Managers

International Water and Sanitation Centre (IRC)/

Water Supply and Sanitation Collaborative Council (WSSCC)

International Water and Sanitation Centre and Water Supply and Sanitation Collaborative Council

World Health Organisation

Water, Sanitation & Health

German Water e.V.

Meet the German Industry

Gelsenwasser AG

Private Water Management in Germany

Stockholmer Water Symposium (SIWI)

World Water Council (WWC)

International Water Policy Think-Tank

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

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Part of the Exhibition area at the Bundeshaus.

II. CONFERENCE OUTCOMES

II.1 Ministerial Declaration adopted by ministers meeting in the Ministerial Session



Entrance of the Conference Venue.

We, ministers with responsibilities for water affairs, environment and development from 46 countries throughout the world, have assembled in Bonn to assess progress in implementing Agenda 21 and to discuss actions required to increase water security and to achieve sustainable management of water resources.

We consider that the World Summit for Sustainable Development, scheduled for August 2002 in Johannesburg, needs to demonstrate renewed commitment to sustainable development and political will to action.

We consider the equitable and sustainable use and the protection of the world's freshwater resources a key challenge facing governments on the road to a safer, more peaceful, equitable and prosperous world. Combating poverty is the main challenge for achieving equitable and sustainable development, and water plays a vital role in relation to human health, livelihood, economic growth as well as sustaining ecosystems. The outcome of the World Summit on Sustainable Development must include decisive action on water issues.

We express our deep concern that at the beginning of the 21st century 1.2 billion people live a life in poverty without access to safe drinking water, and that almost 2.5 billion have no access to proper sanitation. Safe and sufficient water and sanitation are basic human needs. The worldwide struggle to alleviate poverty must bring safe and decent living conditions to those who are deprived of these basic requirements.

Governance

The primary responsibility for ensuring the sustainable and equitable management of water resources rests with the governments.

Each country should have in place applicable arrangements for the governance of water affairs at all levels and, where appropriate, accelerate water sector reforms. We urge the private sector to join with government and civil society to con-

We confirm our resolve to reach the International Development Targets agreed by the UN Millennium Summit, in particular the target to halve, until the year 2015, the proportion of people living in extreme poverty and to halve the proportion of people who suffer from hunger and are unable to reach or to afford safe drinking water. We also confirm our resolve to stop the unsustainable exploitation of water resources by developing water management strategies at regional, national and local levels.

Water is needed in all aspects of life. For sustainable development, it is necessary to take into account water's social, environmental and economic dimensions and all of its varied uses. Water management therefore requires an integrated approach.

We emphasise that ten years after the UN Conference on Environment and Development and the Dublin Conference, and several years after the global water conferences in Paris and The Hague, there is still a need for greater commitment to implement commonly agreed principles on water resource management. Pressures on the world's scarce freshwater resources and aquatic systems have increased. Water pollution and unsustainable patterns of water consumption are among the causes. Water use efficiency needs to improve.

We agree that governments, the international community, the private sector, the nongovernmental organisations and all other stakeholders need to base their actions on the following:

tribute to bringing water and sanitation services to the unserved and to strengthen investment and management capabilities. Privately managed service delivery should not imply private ownership of water resources. Service providers should be subject to effective regulation and monitoring.

We encourage riparian states to co-operate on matters related to international watercourses.

Funding gap

There is an enormous gap in funding investments in water infrastructure, maintenance, training and capacity building, research, and data generation.

It is urgent to close this gap using existing resources more efficiently and with additional financial resources from all sources: public investment budgets, capital markets, and community based finance, user and polluter charges; as well as increased international development financing from public and private sources particularly for developing countries to reflect the acute needs in the water sector.

The lack of financial resources for water infrastructure investment, operations and maintenance

is particularly hurting the poor in Least Developed Countries and in other countries with people living in extreme poverty.

Critical actions for closing the financial gap are poverty alleviation and the improvement of opportunities for trade and income generation for developing countries.

Resources also need to be made available to assist developing countries to mitigate the effects of natural disasters and to assist in adapting to the impacts of climate change.

Water development programmes, to be successful, should be based on a good understanding of the negative impact desertification causes to people living in affected areas.



Ministers from all over the world adopted the Ministerial Declaration during the Ministerial Session on 4th December 2001.

Role of the international community

We call on the international community to strengthen its commitment and its efforts to enable developing countries to manage water sustainably and to ensure an equitable sharing of benefits from water resources.

We call upon the Secretary General of the United Nations to strengthen the co-ordination and

coherence of activities within the UN system on water issues in an inclusive manner.

We recall the agreed UN target for official development assistance of 0.7 per cent of GDP. Developed countries which have not yet reached the target should exert their best efforts to do so.

Capacity building and technology transfer

We recognise that capacity building and innovative technologies including the improvement of indigenous technologies are needed to efficiently utilise water, control pollution and develop new and alternative water sources in water stressed countries. We will support capacity building programmes and information exchange to ensure the effective use of human, financial, and technical

resources for water management. We will facilitate technology transfer initiatives to enable technologically less developed countries to acquire capacity to manage water with the best available knowledge and equipment.

We need improved and coherent assessments of state and trends in the world water situation.

Gender

Water resources management should be based on a participatory approach. Both men and women should be involved and have an equal voice in managing the sustainable use of water resources

and sharing of benefits. The role of women in water related areas needs to be strengthened and their participation broadened.

Next steps

We urge the World Summit on Sustainable Development to take account of the outcome of this International Conference on Freshwater.

We expect that the International Year of Freshwater in 2003, and the 3rd World Water Forum in Japan will be a good opportunity to further discuss

on the roles and actions for all players in international society on the issues of sustainable development of freshwater.

We thank the government of Germany for its hospitality and its determination to promote dynamic action on water issues.

II.2 The Bonn Keys

We are convinced that we can manage water better, and that this will be a major step toward achieving sustainable development.



Conference Facilitator Margaret Catley-Carlson summarised the Conference discussions in "The Bonn Keys".

1. **The first key is to meet the water security needs of the poor** – for livelihoods, health and welfare, production and food security and reducing vulnerability to disasters. Pro poor water policies focus on listening to the poor about their priority water security needs. It is time now to build on the national and international commitment on drinking water with the determination also to halve the number of those who do not have access to sanitation.
2. **Decentralisation is key. The local level is where national policy meets community needs.** Local authorities – if delegated the power and the means, and if supported to build their capacities – can provide for increased responsiveness and transparency in water management, and increase the participation of women and men, farmer and fisher, young and old, town and country dweller.
3. **The key to better water outreach is new partnerships.** From creating water wisdom, to cleaning up our watersheds, to reaching into communities – we need new coalitions. Energized, organized communities will find innovative solutions. An informed citizenry is the frontline against corruption. New technologies can help; so can traditional techniques and indigenous knowledge. This Bonn stakeholder dialogue is part of the process.
4. **The key to long-term harmony with nature and neighbour is cooperative arrangements at the water basin level, including across waters that touch many shores.** We need integrated water resource management to bring all water users to the information sharing and decision making tables. Although we have great difficulty with the legal framework and the form agreements might take, there is substantial accord that we must increase cooperation within river basins, and make existing agreements more vital and valid.
5. **The essential key is stronger, better performing governance arrangements.** National water management strategies are needed now to address the fundamental responsibilities of Governments: laws, rules and standard setting; the movement from service delivery to the creator and manager of an effective legal and regulatory framework. Effective regulatory arrangements that are transparent and can be monitored are the way to effective, responsive, financially sustainable services. Within these we will welcome both improved public sector and private sector delivery arrangements.

Water is essential to our health, our spiritual needs, our comfort, our livelihoods, and our ecosystems. Yet everywhere water quality is declining, and the water stress on humanity and our ecosystems increases. More and more people live in very fragile environments. The reality of floods and droughts touches increasing numbers and many live with scarcity. We are convinced that we can act, and we must. We have the keys.



II.3 Bonn Recommendations for Action

In December 2001 an innovative meeting took place in Bonn, focussing on water as a key to sustainable development. The conference brought together government delegates from 118 countries, including 46 Ministers, representatives from 47 international organisations and delegates of 73 organisations from major groups and civil society. It was a meeting appropriate for the age of global partnerships as it demonstrated that governments, the private sector, civil society and local and grassroots initiatives can work together in a spirit of partnership while acknowledging the differences in their mandates, roles and responsibilities. It neither avoided nor resolved the challenging and contentious issues in water affairs that are debated in communities or at national and international levels. However, it reached a remarkable degree of consensus given the controversial nature of these issues and the broad representation of stakeholders taking part in the meeting.

These recommendations for action result from this conference. As convener of the conference, the German government is pleased to take them forward.

* * *

Ten years after the UN Conference on Environment and Development, the world is preparing for the World Summit on Sustainable Development. More than ever, all the people of the world need

development which is sustainable: women and men, the old and the young, the poor and the wealthy, people in the south and in the north. The challenge to turn the concept of sustainable development into reality is immense. Yet the only other choice would be to accept poverty, deprivation, insecurity and discrimination as a fate for billions of human beings, and continued unsustainable management of natural resources in many parts of the world.

The International Conference on Freshwater has reviewed the role of water in sustainable development, taken stock of progress in the implementation of Agenda 21 and identified how this implementation can improve. It has built on many previous efforts and conferences which have defined the challenges and developed principles and policies related to water and sustainable development. There is often a gap between making such policies and putting them into practice. So this conference focussed on practical ideas.

Water is a key to sustainable development, crucial to its social, economic and environmental dimensions. Water is life, essential for human health. Water is an economic and a social good, and should be allocated first to satisfy basic human needs. Many people regard access to drinking water and sanitation to be a human right. There is no substitute for water: without it, humans and other living organisms die, farmers cannot grow food, businesses cannot operate.

Providing water security is a key dimension of poverty reduction.

Despite improvements in water use efficiency, the use and demand for freshwater and the incidence of water pollution have increased. Access to safe water supply and adequate sanitation, particularly in developing countries, has during the last two decades barely kept pace with population growth. The demand for water for food, human consumption and sanitation is increasing. Ecosystems are becoming increasingly stressed by water scarcity and pollution.

The conference has analysed the implications of recent landmark decisions taken by the international community. Most relevant among them are the International Development Target set by the UN Millennium Assembly "to halve, by 2015, the proportion of people living in extreme poverty and to halve the proportion of people who suffer from hunger and are unable to reach or to afford safe drinking water", and the emphasis on stewardship "to stop the unsustainable exploitation of water resources". To reach that target for drinking water, best available estimates show that, by 2015, an additional 1.6 billion people will need access to adequate water infrastructure and services. In addition, over 2 billion will need improved sanitation.

Estimates for required global investment in all forms of water-related infrastructure vary widely up to \$ 180 billion annually, compared to a current estimated level of \$ 70-80 billion. Water supply and sanitation for basic human needs, however, accounts for only a small proportion of these totals: its needs are estimated at approxi-

mately \$ 20 billion annually, compared to a current level of \$ 10 billion.

The participants of the conference have noted that the challenges have been adequately defined, the key targets described, and locally appropriate principles and policies for water management identified. They have identified positive ways forward relating to a wide range of water-related issues.

The conference recommends priority actions under the following three headings:

- Governance
- Mobilising financial resources
- Capacity building and sharing knowledge

The recommendations are addressed to the international preparatory process of the World Summit on Sustainable Development in Johannesburg for consideration and review. They also provide a reference for the Third World Water Forum in Kyoto, and to all the different types of organisations that are working in water, poverty and sustainable development.

To relate to the World Summit on Sustainable Development's overall objective of sustainable development, sectoral themes such as water need to be harmonised with, and possibly integrated into, national strategies for poverty reduction (such as Poverty Reduction Strategy Papers).

Water security for all is an achievable goal. There is enough water for everybody in the world, but only if we change the way we manage it. The responsibility to act is ours – for the benefit of the present and future generations.



More than 700 delegates developed jointly the Bonn Recommendations for Action.

Actions in the Field of Governance

1. Secure equitable access to water for all people

- The primary responsibility for ensuring equitable and sustainable water resources management rests with governments. It requires the participation of all stakeholders who use or protect water resources and their ecosystems. Special attention is needed to improve the participation of those people, particularly the poor, who are often excluded from decision-making.
- Public responsibility includes the task to set and enforce stable and transparent rules that enable all water users to gain equitable access to, and make use of, water.
- Countries should be in the process of developing water resources management plans by 2005.
- Water resources policies and management should be better linked with other international agreements and processes, such as those concerned with climate change, desertification, biodiversity, wetlands, dams, the marine environment and sustainable forests. They should also be linked to international processes on development, finance and to the national benefits from trade in other goods.



Chairperson Rogatien Biaou (centre), Co-Chair Jisong Wu (left) and Rapporteur Aizaz Chaudry (right) from Working Group A on "Governance, Integrated Management and New Partnerships".

2. Ensure that water infrastructure and services deliver to poor people

- Water is an integral part of sustainable development. Policies for all aspects of water should be clearly linked to policies for poverty reduction and economic growth. Governments should review the priority given to water and sanitation and to productive water infrastructure in national and international programmes to tackle poverty.
- Water infrastructure and services should be pro-poor and gender-sensitive. The plans should be realistic and targeted to the needs of the poor, and should include targets and indicators of progress at all levels.
- The UN Millennium Declaration target on drinking water should be complemented by a corresponding target to halve the proportion of people lacking access to improved sanitation by 2015.

3. Promote gender equity

- Water management policies should not distinguish between water users by gender and should allow men and women equitable access to water resources, including safe drinking water and sanitation.
- Water resources management should be based on a participatory approach. Men and women should be equally involved in managing the sustainable use of water resources and sharing of benefits. To achieve equity, in many parts of the world the role of women in water management needs to be strengthened and their participation broadened.
- Water experts and policy makers should be trained to work in a gender-inclusive manner. In many places, specific support is also needed to empower women to take up leadership and managerial roles in water resources policies and management.
- Water policies and water management systems should be gender-sensitive. They should reflect the division of roles and labour – paid and unpaid – between men and women in all settings related to water. Data relating to water should be disaggregated by gender.



Chairperson Bärbel Dieckmann (centre) with the Co-Chairs of the Gender Plenary Session: Diane M. Quarless (left) and Jon Lane (right).





Intensive agriculture in the Middle East.

4. Appropriately allocate water among competing demands

- Water should be equitably and sustainably allocated, firstly to basic human needs and then to the functioning of ecosystems and different economic uses including food security. Allocation mechanisms should balance competing demands and take into account the social, economic and environmental values of water. They should reflect the links between surface and groundwater and those between inland and coastal water, growing urbanisation, land management, the need to maintain ecosystem integrity and the threats of desertification and environmental degradation.
 - Integrated water resources management should be sustainable and optimise water security and human benefit per unit of water while protecting the integrity of ecosystems.
- Water should be treated as a valuable and finite resource. Water demand should be more actively managed, and water use efficiency increased in all uses.
- Irrigated agriculture is the world's largest user of water, and therefore offers the largest potential in terms of water savings, the benefits of which can be shared with other sectors.
 - Countries should set appropriate national targets to improve the equity and efficiency with which water resources are used.
 - The value of ecosystems should be recognised in water allocation and river basin management. Allocations should at a minimum ensure flows through ecosystems at levels that maintain their integrity.

5. Share benefits

- Watersheds, river basins, lakes and aquifers must be the primary frame of reference for water resources management. Institutional and participatory mechanisms need to be developed at this level.
 - Water can promote regional co-operation. Such co-operation across internal and international boundaries should be intensified as a
- means to share the upstream and downstream benefits.
- Co-operative management of such water is best served by long-term commitments. Active strategies should be initiated to exchange water-related knowledge and develop mutual understanding.

6. Promote participatory sharing of benefits from large projects

- In many water-scarce countries, the development of new water sources and infrastructure may be necessary to provide water for development and to mitigate against the impacts of desertification, droughts and climate change.
 - Decisions to construct large water infrastructure projects including dams should be taken after a participatory integrated assessment of needs and options, taking a precautionary approach into account. Actions to improve the performance of existing infrastructure should be a high priority. All risks, costs and benefits
- should be fully accounted for. The role of large infrastructure in sustainable development and poverty reduction should be directly demonstrated.
- Project designs should minimise potential negative impacts on the environment and enhance the livelihoods of project affected parties. People affected by a project should participate in project decision-making and share in project benefits. Proper mechanisms and incentives should be in place for compliance with rules and agreements concerning environmental and social aspects of projects.



Parched soil.

7. Improve water management

- National water management policies should take account of the impact of trade in water-intensive goods on water availability and ecosystems integrity. For example, in water scarce regions, people should grow crops with low water requirements or of high value compared to the water used. Options for improv-
- ing the water balance by importing water-intensive goods from water-rich regions should be explored where appropriate and cost-effective.
- Subsidies that inhibit water use efficiency or cause negative effects on the environment should be reduced.

8. Protect water quality and ecosystems

- Drinking water quality should be safeguarded because it is essential for human health.
- Water governance arrangements should protect ecosystems and preserve or restore the ecological integrity of groundwater, rivers, lakes, wetlands and associated coastal zones. This will maintain the wide range of ecological services that healthy ecosystems provide and the livelihoods that depend upon them.
- Water resources management should complement work to combat desertification and other forms of environmental and ecological degradation.
- Pollution prevention should be prioritised, because it is normally more cost effective than the restoration of polluted waters. Water supplies should be protected from pollution from the source to the user.
- Treatment of waste water must be intensified and made more affordable for municipalities and industry. Investments in appropriate sanitation facilities should protect water bodies from pollution and reduce health hazards. Countries should intensify their attention to the management of diffuse (non-point) sources of pollution.
- Effective legal frameworks for protecting water quality should employ the full range of policy instruments including regulation, voluntary measures, market- and information-based tools. Where such frameworks exist, water quality should be monitored and the regulations enforced. This approach should make use of the polluter pays principle, thus giving incentives to polluters to apply the best available technology to prevent pollution.



Decentral water purification plant.

9. Manage risks to cope with variability and climate change

- Water management arrangements should take account of climate variability and expand the capacity to identify trends, manage risks and adapt to hazards such as floods and droughts. Anticipation and prevention are more effective and less expensive than having to react to emergencies. Early warning systems should become an integral part of water resources development and planning.
- Closer links should be established between development and disaster management systems. This should be achieved both by reducing poor people's vulnerability to disasters and by strengthening post-disaster recovery systems.
- Decision-making mechanisms under uncertainty should ensure flexibility to respond to both rapid onset disasters and long-term changes to water resources. Risk management should be an integral part of water resources management. This should include establishing close co-ordination beyond the water sector.
- Exposure to flood risks should be minimised through wetland and watershed restoration, better land use planning and improved drainage.
- Particular attention needs to be paid to the poor in both rural and urban areas who are typically resident on land vulnerable to disasters and whose livelihoods are particularly vulnerable to their impacts.
- Organisations that deal with disaster preparedness and management should be strengthened. Such action will also place societies in a better position to deal with future climate change.

10. Encourage more efficient service provision

- The predominant public delivery of water services should be complemented by more use of different and often innovative forms of service delivery, including self help groups formed by the people themselves, informal service providers, co-operative societies, and local and international private enterprises. In each situation, the approach should be chosen that would best benefit people and the environment.
- All service providers should be subject to effective regulation, benchmarking and monitoring. They should be efficient, accountable, and protected from inappropriate pressures. There should be clear separation between the roles and responsibilities of the regulator and the service providers.
- Regulation is a national level function which should be strengthened through international networking and the application of consistent principles, standards and methods.



Maintenance and repair of water pipes.

11. Manage water at the lowest appropriate level

- People need to be centrally involved in management and governance decisions concerning water resources. Local stakeholders should develop mechanisms for collaborative management of the local water needs and resources. The design and operation of water services should use a people centred approach and be based on understanding the needs of the people to be served.
- Decision making, implementation of projects, and operation of services should be decentralised to the lowest level capable of handling such tasks, keeping in mind that watersheds are the appropriate frame of reference for water resources management. Local governments, community-based organisations and private service providers (where they exist) should be the key players in local management and the provision of local services. This requires appropriate legislation and financial mechanisms to empower local government and to facilitate the role of small scale service providers.
- National governments should strengthen their domestic public funding capabilities and create a viable financial frame for local governments. This will require significant support to modernise the financial planning, management and accounting skills in local governments. Decentralisation of responsibilities for water and other services to local government should go hand in hand with parallel actions to improve management and provide clear authority to raise and retain revenues.



Local water user group discussing water issues.

12. Combat corruption effectively

- The fight against corruption must start with awareness building and should aim at maximising transparency to the public in the entire decision making process of a project, from planning through procurement to construction and operation. It must focus on all parties to any corrupt practices.
- Water governance arrangements should improve accountability, introduce and enforce appropriate legal provisions against corruption, monitor the performance of public institutions and private companies, develop codes of conduct, and invite civil society to play an active role in these processes.
- Assured access for citizens to all relevant information in the public domain is a powerful tool for fighting corruption. The public should also have access to effective and affordable justice.
- All actions, whether initiated by International Financial Institutions, countries or others, to fight corruption are welcomed.



Working Group B, chaired by Jacobus Richelle and Zaal Lomtadze with Jennifer Moore as Rapporteur, discussed "Mobilising Financial Resources".

Actions in the Field of Mobilising Financial Resources

13. Ensure significant increase in all types of funding

- All sources for funding in developing countries – public funding from general budget revenues, water tariffs and charges, external assistance, and private investment – must be strengthened to bridge the gap between current and required levels of expenditure.

14. Strengthen public funding capabilities

- Public budgets are now, and will continue to be, the biggest source of investment in water, particularly in low income countries. Even where the mobilisation of private investment is successful, public funds will generally be needed to support complementary investments and for instruments to protect the public from hazards and reduce risk to investors and suppliers of goods and services.
- Macro economic growth is necessary to strengthen the national and local public revenue base in developing countries, and hence to give the governments the opportunity to put more money into the water sector. For many developing countries, the prospects for such economic growth are linked to broader issues of equitable international trade.
- Investments in water for productivity, and in water and sanitation for health, can result in significant national economic gains.
- Where scarce public funds are being allocated to water, priority should be given to meeting the basic needs of the poor and to preserving the integrity of ecosystems.
- Where domestic capital markets exist, they should be developed further to finance the water sector, for example through issuing local or central government bonds.

15. Improve economic efficiency to sustain operations and investment



- Water service providers should aim for financial sustainability through receiving sufficient income from their customers to finance operation, maintenance and capital costs. Balancing this aim, however, cost recovery objectives should not be a barrier to poor people's access to water supply and sanitation. Where the poor cannot afford to pay the full cost of water supply and sanitation services, tariff systems that allow social targeting should be established. Options include transparent subsidy arrangements from public funds and cross-subsidy from other customers.
- Efforts to recover costs should focus on those consumers who use the most water. The authorities that set tariffs should be willing to charge the full cost to users that can afford to pay.
- Transparent subsidies can be applied where appropriate and necessary to preserve ecosystems.
- Subsidies to any water-related activity should be reduced and finally eliminated if they are leading to inefficient use of water or causing negative effects for the environment.

16. Make water attractive for private investment

- In view of the high capital demand for water infrastructure investment, it is necessary to augment public funding by mobilising private funding for water utilities, wastewater treatment, irrigation and other water-related programmes. These could take the form of public-private partnerships, noting that privately-managed service delivery does not imply private ownership of water resources.
- Investors seek confidence that their legal and financial interests are protected for the full contract duration, and that they can recover their investment over time. This implies appropriate regulatory arrangements, transparent contracting procedures, reliable cost recovery mechanisms, and public acceptance of such arrangements. Where there is no track record of successful private investment, pilot projects require additional attention by governments, stakeholders and the international community to ensure that the interests of the water consumers, the environment, and the investors are safeguarded.
- The self help potential of local communities should be used more widely to reduce the financial requirements of rural and urban projects for poverty alleviation. Support should be given to NGOs and others who assist local communities to develop micro-finance capabilities.

17. Increase development assistance to water

- The international donor and lending community should aim to raise the priority that it gives to water in the developing and transition countries. Developed countries which have agreed to, but not yet reached, the agreed UN target for official development assistance of 0.7 per cent of GDP should exert their best efforts to do so.
- Development assistance should be complementary to domestic sources of funding and serve a catalytic role, building capacity and helping local and regional institutions to define their own solutions and models, and creating an enabling environment attractive to potential investors. Private sector participation should not be imposed on developing countries as a conditionality for funding.
- External development assistance for direct provision of water infrastructure and services in developing countries needs to be targeted towards serving the poor (especially the rural poor for whom the prospects of other types of service provision are remoter than in urban areas), preserving the integrity of ecosystems and mitigating the effects of climate variability and change.
- The donor community should use its expertise and leverage to help developing countries to mobilise investment financing from all sources, including commercial ones.

Actions in the Field of Capacity Building and Sharing Knowledge

18. Focus education and training on water wisdom

- Knowledge is the foundation of understanding and decision-making. Shared knowledge, and respect for different forms of knowledge, are the basis for building consensus and resolving conflicts. Decisions can only lead to effective management actions if the actors have the right knowledge and skills. Enhancing human capacities at all levels is a key for wise water management. This needs to be based on integrating the distinct and complementary contributions of local, traditional knowledge, knowledge from different professionals and disciplines and the hands-on experience of practitioners. All can and should learn from each other. Practical actions to build partnerships and create channels for sharing information at all levels are a key first step in developing integrated water management.
- Education and training, both formal and non-formal, should give all people respect for water as a finite, vulnerable and valuable resource. It should make sure that the right skills are in the right place at all levels from local communities to international institutions. This would include technical skills, knowledge of the multiple benefits and ecological services of water, the relevance of sanitation and hygiene, a basic understanding of integrated water resources management as well as new skills in areas such as business management, risk management and community participation.
- Education at all levels should promote a holistic, interdisciplinary approach to water management.
- Human resources development for water should follow a five-pronged approach: education for the formative years (primary and secondary education), vocational training, university education, continuous education and research capacity strengthening. Education and training should be demand-oriented, participatory and hands-on, and make use of information and communications technology, distance learning and institutional twinning arrangements. Training for water professionals should bridge gaps between hitherto separated disciplines such as engineering, economics, hydrology, ecology, gender, and social science. It should include training in participatory approaches and in the realities of the lives of the poor.
- The mass media, traditional media and other avenues of public awareness building, including advertising, should be used to convey the basic messages of good water management and of hygiene and sanitation. Such messages may combine human values with both traditional and modern scientific knowledge.
- The knowledge and skills needed for water management change as new knowledge is generated and new needs emerge. Mechanisms to disseminate knowledge, change curricula, exchange teaching materials and create partnerships between educators and trainers around the world should be developed and funded.
- Concerted actions to enhance the skills of poor people, and especially women, are needed. These should be adapted to local needs and opportunities. NGOs and other civil society organisations often have a special role in such programmes.
- Workers and their Trade Unions should be recognised as an important resource for knowledge, skills and expertise related to water.
- Specific initiatives are needed to create awareness and provide skills and experience to young people. These should create better professional opportunities and bring young people from different parts of the world together to share experience and create mutual respect and understanding. Donor countries should expand programmes for young professionals from around the world to gain hands-on experience, and in particular to work closely with poor communities.



In Working Group C, the discussion on "Capacity Development and Technology Transfer" was chaired by Lars Engfeldt and Claudia Martinez-Zuleta, with Alison Drayton as Rapporteur.

19. Focus research and information management on problem solving



Sharing knowledge and building capacity.

- Knowledge must be shared globally and packaged appropriately for intended target audiences. This includes the provision by all countries of basic data for research and assessment. Information management must provide information to decision-makers at the right time and in a form they understand.
- Research and knowledge sharing on water should contribute more effectively to preventing and solving problems, and follow an holistic inter-disciplinary approach.
- Better knowledge is needed everywhere, but always has a price. Knowledge management should focus on quality, not quantity.
- Internationally-accepted indicators on different aspects of water management need to be developed. These should include indicators for the relevant targets in the UN Millennium Declaration and for other relevant national and international goals. These indicators should be developed through participatory processes, including stakeholders from different levels and around the world. The World Water Assessment Programme should take a lead role in the development of these indicators.
- Sharing knowledge through dialogue is often the starting point for developing further collaboration on water management through building trust and mutual understanding. For example, river basin organisations could start with data and knowledge sharing and develop into other activities as and when there is a clear and agreed need.

20. Make water institutions more effective

- Many existing water institutions need to change their focus and their method of addressing challenges, by reorienting their role and structure appropriately.
- Capacity building and technical assistance are among the essential elements for institutional change for integrated water management. This is a long-term process, which should be based on gradual, practical steps. It must be flexible, as needs are constantly changing. Collaboration and international partnerships are particularly needed in many developing countries, where reform is most needed but resources are most limited.
- Specific initiatives to strengthen institutions at the community level, that take ethical issues into account, are essential for empowerment of the poor. This requires both mobilisation at the community level and, where necessary, changes to policies, laws and government organisations to create the enabling environment through which local-level institutions can operate.
- There are many positive experiences of institutional change throughout the developing world. Specific initiatives to develop models of good practice and improve South-South sharing of experiences are needed.
- Successful institutional change and reform depend on the effectiveness of the wider governance environment. Institutional reform programmes should complement governance improvements.

21. Share knowledge and innovative technologies



- Appropriate technologies for the whole range of water resources management and service delivery should be available on an equitable basis to countries and regions experiencing water related problems. They should build on and strengthen existing and innovative knowledge and environmentally friendly technologies.
- Systematic efforts are needed to revive and learn from traditional and indigenous technologies (for example rain water harvesting) around the world.
- The wealth of available experience in all countries and sectors needs to be tapped in a systematic fashion. Donor agencies and industry need to co-operate for the transfer and adaptation of the best available technologies. South-South technical transfer is also important.

Roles

Water-related organisations are moving on from isolation to partnership. This process involves changes to laws, policies and institutional procedures, complemented by actions to build capacities. People and organisations fulfilling a new role must be able to meet their new responsibilities.

This is a long process that needs to be properly resourced, for example by guidance in social responsibility or accountability. International partnerships can play a catalytic role in this process.

22. Governments

- Governments, including local government, should more actively play their key role in water governance and drive local, national and international processes of water management reform.
- Governments should consider and, where appropriate, adapt and apply internationally recognised principles to national and local actions, whilst respecting different cultures, traditions and legal frameworks. Governments should play the pivotal role in the mobilisation of financial and human resources, the setting and enforcement of legislation and standards and in the establishment of opportunities and procedures for a broader public participation in water management.
- Many governments are moving away from service provision towards facilitating that provision by others.

23. Local Communities

- People at the local level actively manage many aspects of water resources. They often have a better understanding of the real potential and limitations of their local environment. They can be empowered to meet this role by social mobilisation processes.
- Concerted actions are needed to enhance capacities and knowledge, secure rights, develop leadership, overcome local inequalities and ensure that local communities have access to the technologies and financial and other resources that they need to turn choices into actions.
- Indigenous people often have particular knowledge of the spiritual value of water, which they can share with others.



A representative of the Local Authorities making a statement.

24. Workers and Trade Unions

- Workers and Trade Unions should be included in participatory forms of decision-making and particularly in joint committees of management and Trade Unions.
- In order to ensure workers' contributions to sustainable water development, core labour standards should be accepted and implemented, particularly those relating to freedom of association.

25. Non-Governmental Organisations

- NGOs should continue to participate in policy making and implementation, including the delivery of services, and to represent the interests of stakeholder groups and the environment. They can play an important role in advocacy and in ensuring the accountability of government and others. They can also play an important role in creating a link between government and local communities. They should raise awareness and knowledge among their members and constituencies on integrated water management.
- Professional and scientific organisations, with their extensive knowledge and experience, should contribute increasingly to manage water. They should widen their professional scope and engage with more inter-disciplinary and cross-sectoral approaches.

26. The Private Sector

- Private companies, ranging from international enterprises to small local service providers and including financial institutions, should contribute more actively to sustainable governance, financing, service provision and capacity building in water.
- Becoming a partner in water services requires recognition of co-responsibility for the common good. Management or ownership of assets carries the obligation to conduct business in a socially, environmentally and ethically acceptable manner.

27. The International Community

- The United Nations and the international community should strengthen their commitment and their efforts to enable developing countries to manage water sustainably.
- Strong partnerships in the international community can be a catalyst for reform and capacity development. In particular, they can help mobilise knowledge and financial and other resources to reduce poverty and create more sustainable forms of water resources management.
- The United Nations should strengthen the coordination and coherence of its activities on water issues in an inclusive manner.



Delegates from UN and International Organisations at the Bonn Conference.

II.4 Facilitator's Conclusions of the Multi-Stakeholder Dialogue by David Hales

Dear Ministers and Delegates,

The two Plenary Sessions of Multi Stakeholder Dialogue produced a richness and diversity of views that is difficult to summarize adequately. Yet, it is important to note that the sessions produced strong consensus on several issues and highlighted well-articulated concerns on a number of others.

From the Dialogues emerged a sense of optimism – that we can be successful at meeting the targets of the international community and meeting the needs of people and ecosystems for freshwater. There also emerged a sense of urgency – that these are real issues every day for real people in real places, and that action is necessary now.

There also emerged a sense of frustration at the disconnect between the rhetoric of water conferences and declarations and the reality of actions that have followed past meetings.

There was certainly consensus on the magnitude of the problem: If we are to meet the goal agreed at the Millennium Summit, each day for the next 14 years we will need to provide new access to safe and affordable water for more than 300,000 people. If we had a similar target for sanitation, an extra 390,000 people per day will have to be provided new services. It is clear that business as usual is not an option.

There was strong consensus that meeting our goals would require new Partnerships, and there was broad agreement on the characteristics of the partnerships that are called for:

- full effective multi-stakeholder participation in watershed management groups;
- specific encouragement and support for some groups in order to ensure their meaningful participation; a point made most articulately by Women and particularly relevant to poor communities;
- decision making at the local level, as close to the resource as possible;
- acceptance of the right to freedom of information, and full public access to information, knowledge sharing, transparency and meaningful participation in decision making;
- an ongoing program of capacity building, for all stakeholders;
- clear legal and regulatory frame works, enacted and enforced at all levels of government, with governmental leadership in monitoring access and pricing.

Most clearly there was consensus on the importance of local government. While partnerships can be incapacitated by weakness in any partners, no partnership can succeed without a strong and active local government. The need to direct a higher percentage of ODA for capacity building to support local governments was universally acknowledged.

There was an equal degree of consensus on the need to eliminate corruption. All agreed that one of the most destructive influences on equitable access to water is corruption. All stakeholders and governments agreed that this was a problem requiring the will and action from governments to eliminate at all levels. The conversation emphasized in particular the need for capacity building, strengthened accountability, transparency, and strong enforcement of legislation and implementation of codes of practice.

Equally strong was the consensus regarding the need to mobilize financial resources from all available sources. There was no dissention from the call for achieving 0.7% target for Official Development Assistance. There was also recognition that financial problems are caused not only by an inadequate amount of money, but also by misplaced priorities, and it was noted that the small percentage of ODA that goes to provision of water services was only slightly exceeded by the percentage of resources invested by national and local governments.

There was strong agreement that the emphasis on sustainable financing should not diminish commitments by all stakeholders, and especially governments to protect natural systems and see that ecosystem needs are sustainably met.

There were other concerns that were strongly voiced by some:

- Many are deeply concerned by the privatization of water resources and services. All stakeholders supported public ownership of water resources.
- Some, rural farmers in particular, call attention to the link between food security and water, and to the concerns about diverting water from rural farmers. They see a clear need for more investment in the development of sustainable agriculture.
- Others are concerned about a lack of recognition for the commitment of business to meeting the needs of the poor, and, emphasized business' clear call for the elimination of corruption and for the enactment and enforcement of strong predictable regulation.



David Hales, Facilitator of the Multi-Stakeholder Dialogue.

Others expressed concern for practices of international financial institutions that disempower local governments, communities and developing nations, practices such as requiring public private partnerships that promote privatization of water resources and services.

In closing, Chair, we must note that there is widespread respect and admiration for the German government and the international steering committee for ensuring that the stakeholders have been able to participate as full participants over these two plenary sessions and in the meetings to come. The innovation for hosting the MSD as a fully integrat-

ed part of this conference has resulted in a richness and diversity from which most delegates seem to feel that they have benefited. In addition, the two Plenary Sessions have generated a demand for participation that they were unable to meet. For every good idea recorded and reported, there must have been five others we did not have time to address.

I hope that we have helped guide the working groups attention to critical issues and that we have suggested directions that both emphasize and enable real action to meet critical water supply and sanitation needs in the context of the global commitment to sustainable development.

II.5 Facilitator's Report on Working Group A

Governance, Integrated Management and New Partnerships



Josefina Maestu, Facilitator of Working Group A.

WORKING GROUP A Governance, Integrated Management and New Partnerships International Congress Centre – Bundeshaus Bonn: Plenary Hall Bundestag	
Rogatien Biaou, Secretary General, Ministry of Foreign Affairs and African Integration, Bénin	Chair
Jisong Wu, Director General, Ministry of Water Resources, China	Co-Chair
Aizaz Ahmad Chaudhry, Councillor, Permanent Mission of Pakistan to the UN, Pakistan	Rapporteur
Josefina Maestu, Advisor, Department of Economic Theory, University of Alcalá de Henares, Spain	Facilitator

Session 1: Protection of Water Resources and Ecosystems

The presentations by Ger Bergkamp, IUCN, on "Government arrangements, compliance and enforcement" and by Friedrich Barth, EC, on the EU Framework Directive stressed the need to avoid sectoral approaches that lead to inefficiencies. Integrated water resource management at river basin level is necessary. This means setting clear and shared objectives for water planning and management in the basin. The ecological objectives have importance because the health of

aquatic ecosystems and ecosystem services is key for development. Ecological objectives are difficult to define but comparability serves to build trust. There is a need to create transparency, involve the public in all steps and ensure capacity in the administration. It is important to motivate people in the process and build social capital, working in creating mutual trust. These are crucial aspects for integrated water resources management.

Discussion

- Motivation and strengthening social capital at the lowest possible level are essential elements in implementation in water management.
- Commitment to objectives is essential.
- Information to the community is important to build consensus for action.
- The move from centralised management to decentralised management needs to be implemented gradually and should focus on training and capacity building.
- Water should not only be priced but also valued in terms of derived benefits.
- Undertaking large-scale infrastructure, needs to be based on economic and social feasibility, and should serve the people. The environmental and social impacts need to be taken into account.
- Farmers need environmental friendly technologies to deal with water contamination. Incentives might be needed as well as financial security in relation to necessary investments.

Session 2 + 3: Infrastructure for the Poor

Gourisankar Ghosh from WSSCC addressed the Working Group A participants with a Keynote speech on "Link infrastructure development to poverty alleviation". Mukami Kariuki from World Bank WSSP presented a Case Study on "Small scale private sector involvement in Africa" and Oswald Chanda from the National WSS Council, Zambia, a Case Study on the "Zambia Water Regulator: Independent regulation, monitoring, professional management". Kalyan Ray from UNCHS HABITAT made a speech on "Decentralisation, lowest possible level" before Dennis Mwanza from WUP explained the Case Study on African Cities.

These presentations on "Infrastructure for the Poor" pointed out that the challenges facing the world are stunning; with the need to provide 300.000 more people each day with water and 400.000 more each day with sanitation if goals of halving the number of un-served should be reached by 2015. Decades of lack in investments and poor sector and institutional arrangements might be some factors behind this serious situation. Other factors could include the lack of land tenure systems that inhibit investments in urban slum areas, the lack of community participation,

the various constraints that local authorities are facing and the need to improve local resource management.

The importance of small service providers in the provision of water to the poor was pointed out. They are the ones mainly providing water to the un-served in many urban areas in developing countries. It is necessary to improve their performance and coverage, removing legal and regulatory constraints, adapting pricing and payment terms for water, recognising and formalising the partnerships with water utilities.

Peri-urban settlements in many cities are characterised by uncertain or illegal tenure, lack of recognition by governments, minimal or no infrastructure. Sector reforms focus on privatisation with efficiency improvements in the formal city. Peri-urban settlements get lower priority. There is lack of institutional anchors for community participation in infrastructure and services. It is important to reinforce the synergy between formal and informal sectors, promote scaling up of good practices, strengthen cross-sectoral partnerships, provide access to novel innovative models of financing community initiatives.

Discussion

The need to set targets to achieve water security and access to water and sanitation for the poor

Improving water security and access to water and sanitation may require decisive action and the setting up to clear objectives. Adding targets and time bound measures may be crucial in order to attract both political and financial interest. Five targets were proposed by the UK and Swedish delegations in relation to improving sanitation and water management for the international agenda. These targets are:

- Commit to halving the proportion of people without access to improved sanitation by 2015.
- Develop national water resources plans, which include a national abstraction strategy, that would be in process of implementation by 2005.
- Set national targets to improve efficiency with which water resources are used.
- Review the priority given to water and sanitation in national and international programmes to tackle poverty.
- Halve by 2015 the number of river basins without river basin management plans or strategies.

The Comments on these Proposals were:

- Considerable investments would be needed in order to fulfil the targets in many parts of the world.
- It might be too ambitious to include international river basins in the goal of management plans and strategies, in particular within the suggested time frame of 2005. The focus should be on the national and local level.
- The inclusion of international basins, could serve as a way of promoting co-operation.
- Targets in themselves are not enough. There must be an additional focus on the necessary prerequisites that would ensure the realisation of such targets. This includes clear methodology for monitoring the meeting of targets and thus also for establishing generally agreed indicators. Monitoring systems would need to provide both quantitative and qualitative data in order to provide the basis for accurate and reliable assessments.
- The measurements must focus on ultimate results (i.e.: poverty alleviation), and the process of how such results are achieved (level of community participation). Otherwise we could be omitting the idea of stakeholder participation, transparency etc.
- Without satisfying all these pre-conditions, it would be difficult to establish and actually measure the indicators of achievement that need to be linked to these targets. It would also be important to include the financial requirements and necessary measures to attract the financial resources.
- There could be flexibility about the dates of these targets. It will be important, however, to establish a general framework.
- It would be important to present clear options at the World Summit on Sustainable Development in Johannesburg.
- Further discussions would be needed on issues linked to monitoring and indicators.

Infrastructure, Water and Sanitation Services for the Poor

- In infrastructure and service provisions there might be lack of clarity both at the national and local level in policy and action formulation, often due to lack of resources.
- It is important to further strengthen efforts to decentralise and build capacity at the lowest possible level.
- People should be at the centre and because of that it is necessary to consider many different types of solutions.
- For empowerment of the poor it might be necessary to assist poor communities to organize themselves through the process of social mobilisation, by increasing their capacity and promoting the development of partnerships.
- There needs to be training and transparent information for poor communities to enable them to participate on equal terms in such partnerships. There is often a problem in communication interfaces between different actors.
- It is important to differentiate between the issue of privatisation and the need for private investments.
- The role of cross-sectoral partnerships is important, also between local service providers and private utilities, and between local governments and local communities.
- It is important to take into account positive as well as negative implications of various forms of service delivery, as there are good examples of both efficient public and private service delivery.
- Governments need to create an inclusive environment for the provision of better public or private water and sanitation services by changing its role from being a provider to a regulator and facilitator. This might require the rooting out of corruption and the creation of local financing structures.
- Clear-cut separation between regulation, resource management and service delivery need to be in place.
- With some changes in the enabling environment, service providers in the private sector, which are currently partly engaged in efforts to provide water to the poor, can become more actively involved in the process.
- Various barriers linked to land tenure issues, the setting of tariffs and cost recovery for investments were raised as crucial to be confronted if we were to support and increase the role of small service providers and other private providers. The example of rural-urban migration that generates slum dwellings in urban areas which are often illegal, makes it politically and economically unfeasible for governments to ensure the supply of water and sanitation to poor people.
- General recommendations on issues linked to privatisation and pricing could not be valid for all parts of the world, due to obvious geographical, cultural, ideological and other differences.

Session 4: Allocation of Water

Balancing water allocation between users, requires assessing the value of water and improving dialogue between competing users and other interests in water allocation decisions. In the presentations "Balance allocation between users" by Frank Rijsberman from IWMI, Sri Lanka, and "Improve water balance through trade in goods, secure equitable access to public water for all" by Peter Gleick from the Pacific Institute, USA, it was suggested that assessing value means moving

from water efficiency to water productivity (that is related to the value that water generates for farmers, for industry and including the value of ecosystem services). This requires the collection and dissemination of more and better water information. Some conditions are necessary in the examples of reallocation decisions such as strong physical scarcity, water pricing leading to innovative farming decisions and support of government.

Discussion

- Balancing the use of water between the competing demands beyond human needs is a particular challenge.
- In relation to water allocation, the question is whether irrigation water should be treated in the same way as drinking water.
- There are important difficulties in pricing irrigation water.
- Water might not be free of charge and in the agricultural sector it is difficult to price it but it is possible to do so.
- The challenge is to protect the social character of water, but it should not be implied that it is a free and infinite good.
- It is important that water is used efficiently. Efficient use of water is an important objective, but it must also be based on social and ecological needs of communities and the environment. Efficiency should be monitored. There is a need to explore options and develop monitoring systems that work best according to local conditions in any given part of the world.
- Willingness to pay might not be linked to the ability to pay. There are people willing to pay that are not able to pay. In such a situation, the state may have a special responsibility to subsidise the services.
- There is a tendency to deal with water increasingly through market based approaches. It was suggested that water needs to be treated not only as an economic good but also as a social good.
- The question of whether water is a basic human right and whether this is practically enforceable would need to be further analysed.
- Water has a great deal of value especially in traditional societies. It even has religious dimensions.
- Water for basic human needs has top priority but what constitutes basic needs should be clearly defined.
- The debate between public versus private provision of services needs to go beyond rhetoric. A call to under-take a multi-sectoral review of private sector involvement in the water sector was made as part of the process leading up to the World Summit on Sustainable Development in Johannesburg.



Session 5: Transboundary Waters

David Grey discoursed on "Sharing benefits through co-operation" and Thomas Chiramba from the Water Sector Co-ordination Unit, SADC, presented the Case Study "Implementation of Regional Strategic Action Plan and SADC Protocol on Shared Watercourses; Establishment of transboundary River Basin Organizations".

There are 260 river basins shared by 2 or more nations, and there are, in some cases, long standing tensions. These are growing with increasing demands. It is necessary to go beyond the notion of just sharing waters to the concept of sharing

benefits, further moving from dispute to co-operation. International water courses affect the interest and well being of all riparian states. The identification and recognition of benefits and the development of mechanisms for cooperation is fundamental. It is important to recognise the benefits from the river (economic uses), benefits to the river (resulting from improved water flow, river flow characteristics, etc.) and benefits beyond the river (integration of regional infrastructure, markets and trade). Many of which could be shared. This includes water supply, hydropower, agricultural production, eco-tourism, trade, etc.

Considering that optimal river development may require different interests to win and some to lose there needs to be some compensation mechanisms. Suggestions of possible mechanisms for sharing waters, presented by the key note speakers, include water sharing, payments for use rights, bilateral sales or water markets, payments to allow new uses, purchase agreements on power and agriculture, etc.

Discussion

It is important to support the will of states to cooperate. Riparian countries need to reach agreements on what kind of co-operative mechanism will serve them best.

Principles for co-operation exist (such as equitable and reasonable utilisation, no significant harm, etc.).

Master plans could be developed for river basins which could include all dimensions of sharing benefits. It was proposed by some delegations that time bound commitments would be needed, which could include the ratification of the UN Framework Convention on the Law of the non-navigational uses of international water courses.

It was also proposed that specific targets might need to be set, such as halving the number of

It is necessary to consider the importance of the process of building co-operation and trust between the countries sharing water resources, the perception of fairness to sustain co-operation, the generation of unique solutions for different situations. All this makes the development of co-operation a complex process for which there is no blue print and which can often be a much longer process than planned.

countries without river basin plans. Some considered that it may be convenient to start with strengthening regional co-operation between various water uses.

It is important to emphasise the need for financial arrangements for supporting co-operation, considering that the process of co-operation on shared waters may be lengthy and costly. But it is essential, and deserves financial support.

The role of local communities in large-scale plans needs to be considered as it is ultimately necessary for action to be taken at the local level. It might be necessary to recognise the need to educate rural communities about their rights and responsibilities in order to enable them to participate in policy and decision making processes.

II.6 Facilitator's Report on Working Group B

Mobilising Financial Resources

WORKING GROUP B Mobilising Financial Resources International Congress Centre – Bundeshaus Bonn: Wasserwerk	
Jacobus Richelle, Director General, Directorate General Development, European Commission	Chair
Zaal Lomtadze, Deputy Minister of Environment and Natural Resources Protection, Georgia	Co-Chair
Jennifer E. Moore, Head of Sub-Department, Ecosystems and Environmental Resources Directorate, Environmental Conservation Service, Canada	Rapporteur
Jon Lane, Consultant, Water and Sanitation in Developing Countries	Facilitator



Jon Lane, Facilitator of Working Group B.

Introduction

Working Group B comprised approximately 90 people from a wide range of organisations around the world, almost all of whom contributed actively to the discussions. Many different viewpoints were presented, and the Working Group was not

intended to reach formal conclusions. This report describes the most significant subjects debated and mentions many of the views expressed. It ends by summarising some particularly important points that came out of the discussions.

Structure

The Working Group's discussions were spread over five 90-minute sessions, each comprising short presentations by invited speakers followed by lively debate. The subjects followed a logical sequence: based on the premise that water needs more money, the group discussed in turn the various sources of that money.

The first session covered the largest source of finance, the domestic public sector. The keynote speaker was David Ssebabi, Utility Reform Unit, Uganda, and Meera Mehta, Water and Sanitation Program – Africa, presented a summary of good practice.

The second and third sessions considered how to involve private sector investment. The keynote speaker was Rodney Short, Clifford Chance, Germany, and Steve Baseby, Thames Water, UK, presented a case study.

The fourth session concentrated on finance for operations and maintenance and cost recovery. The keynote speaker was John Gibbs, PricewaterhouseCoopers, UK, and Mike Muller, Department of Water Affairs and Forestry, South Africa, presented a case study.

The final session looked at the other major source of finance, international development assistance. There were three keynote speakers: Mr. B. Nawalawala, Ministry of Water Resources, India, Palle Lindgard-Jorgensen, Environmental Protection Agency, Denmark, and John Briscoe, World Bank.

Several people felt that the debate (and indeed the financing) concentrated too much on drinking water compared to water for agriculture or industry, and also on drinking water compared to sanitation.

Session 1: Strengthening Domestic Public Funding

Using Uganda as an example, David Ssebabi's keynote address described a range of steps to strengthen public sector funding, for example: promoting a sector-wide approach in which all incoming funding is pooled, improving the efficiency of the Government's work, decentralising authority to District level, building regulatory capacity nationally, various form of private sector participation. He pointed out that it will take many years to bring private sector finance into the poorer developing countries, and that community contributions to capital costs are negligible, therefore water will continue to depend on public sector funding.

Meera Mehta presented various examples of good practice in public sector finance, for example: including water in poverty assessments and Poverty Reduction Strategy Papers, giving priority to water in the national budget (some countries allocate 9 per cent to water, others only 2 per cent), preparing the public sector's ability to spend more money, arranging access to credit, drawing up and enforcing uniform financing rules.

Some of the main points made by other people in the discussion were:

- Currently very few PRSPs give prominence to water; other sectors are better at promoting themselves than water is, so the Johannesburg WSSD is a particularly important opportunity to promote water issues.
- If decision-making is decentralised to District level, tax-raising power should be correspondingly decentralised.
- Governments should improve the transparency and clarity of their budgets and accounts.
- Domestic capital markets should be developed, for the benefit of both public and private sector investments (issuing municipal bonds was one such suggestion.)
- We should more actively acknowledge the success stories of public sector utilities.

Session 2 + 3: Attracting Investment by the Private Sector

Rodney Short suggested that private sector investment can be attracted by: identifiable revenue flows with adequate tariffs to make a profit, transparent systems both for contract bidding and for subsequent regulation, a guarantee from the host Government that income can be changed from local to hard currencies, legal and political stability, and a fair allocation of risk between the host Government and the private company. Some of the risks to the private sector are: non-payment of bills by customers, maintenance of water quality, leakage control, excessive costs and bureaucracy, political interference or even expropriation, diversions of water by others, droughts, and water source contamination.

Steve Baseby's case study of private sector contracts in Chile emphasised some particularly favourable conditions there, for example: a well-managed economy with a stable currency, a strong local financial market, good availability of qualified professional people. He noted that these may not apply in other countries, and hence that financial arrangements must be tailored to each situation. Governments may need expert advice on legal and financial systems before starting negotiations with potential private sector investors.

Some of the main points made by other people in the discussion were:

- Host Governments (which are each inexperienced in private sector involvement) need strong professional help to negotiate with

international private sector companies (which are very experienced at this).

- The water itself, and the capital assets associated with it, must remain in public ownership.
- There are many types of contract and partnership that can be used.
- A private sector contract can change with time, for example starting with a management contract and progressing to a concession.
- A contract can actually be designed using the lowest public subsidy as the bid criterion.
- Private sector involvement could be concentrated on areas with richer customers, especially to replace previously loss-making public utilities. This could release public funds to serve the poor.
- In some cases the benefit of private sector involvement is simply that its increased efficiency reduces the burden on the public sector finances. One speaker pointed out, however, that such efficiency gains go back to the Ministry of Finance, not necessarily to the water sector.
- National regulators are important figures in any private sector involvement, and should be supported, possibly including international regulatory standards, frameworks or networks (N.B. the World Bank supports one such network of regulators).

- It is particularly difficult for a former public sector utility first to be told it is not good enough at its job, and then to be appointed to regulate its private successor.
- Most of this debate concerned the international private sector, which was itself typical of the lack of attention given to local and small-scale private sector providers.
- Much of the discussion centred on making conditions attractive for the private sector, but we should also consider how to make the private sector attractive to host Governments.

Session 4: Sustaining Operations and Maintenance, and Cost Recovery

John Gibbs discussed the need for tariffs (which are typically very low) to increase over time to cover operation and maintenance costs, renewal and rehabilitation costs, and finally extension and expansion costs. The political decision on acceptable rate of tariff increases should dictate the type of private sector participation, as the different types of contract have different financing needs. The public sector can generally raise capital more cheaply than the private sector, but is generally less efficient in its work: these two effects tend to balance out. The Government can subsidise tariffs if that subsidy is transparent, targeted and time-limited: for example a basic needs tariff and/or tapering transitional subsidies. He also emphasised the importance of preparation time by the Government before involving the private sector.

Mike Muller's case study started from the South African constitutional right to water, from which a policy has developed to provide 25 litres/person/day of drinking water free of charge. Local government is responsible and accountable to the people, while the private sector is used for its technical and financial expertise. There are plenty of options for funding both capital and operation and maintenance costs. Acknowledging that South Africa has a stronger economy than many

other countries, and hence can afford to invest more in water, he made a case for strengthening national economies in developing countries through fairer international trade systems.

Some of the main points made by other people in the discussion were:

- There was significant disagreement on whether poor people can afford to pay full tariffs, with some people arguing that it is only a matter of access not cost while others stated that drinking water and sanitation, especially in rural areas, cannot be wholly self-financing.
- Governments should set subsidies as a matter of social policy, not water policy (one such example mentioned was a transparent cross-subsidy from urban to rural water).
- Municipal authorities are often hesitant to charge full cost tariffs.
- In much of sub-Saharan Africa, full cost recovery will not be attainable for many years.
- Finances can be improved by reducing unaccounted-for water.
- Projects succeed better if women's committees are involved in the cost recovery.

Session 5: The Role of International Development Assistance

Mr Nawalawala, unlike most of the speakers, concentrated more on irrigation than drinking water. He explained how development assistance to India has moved from new infrastructure to rehabilitation and then to sector reform. In future development assistance should help all aspects: new irrigation schemes, improved efficiency of existing irrigation, and institutional reforms. He requested external donors to relax their insistence on particular financial and technical standards.

Palle Lindgard-Jorgensen suggested that development assistance should concentrate on improving the environment for increased sector investments by others, and improving co-ordination of donors and International Financial

Institutions themselves. Governments should increase their ability to spend the money, while donors should increase the proportion of their GDP that they give to international development, give priority to water and sanitation in view of its important health benefits, and make water a key sector at the Johannesburg WSSD.

John Briscoe made supplementary observations on the role of external funding agencies, noting that funding water is about much more than just funding drinking water and sanitation. Water is less profitable than other utilities, so needs longer-term financing and contracts. Hence special arrangements are needed to encourage investment. For example, the World Bank offers

the longest-term loans, reassuring other banks to extend their loan periods. Regarding regulation, he noted that the introduction of the private sector compels the establishment of a proper regulatory system, which can then also regulate the public sector. He also suggested that water problems will never be solved as long as people remain poor, and hence investing in water for productivity is at least as important as investing in drinking water and sanitation. He emphasised that such investments in water infrastructure can boost life expectancy and the national economy.

Some of the main points made by other people in the discussion were:

- Many people criticised the donor and lending agencies for imposing particular private sector arrangements onto recipient Governments, who lack the power to resist. Several people

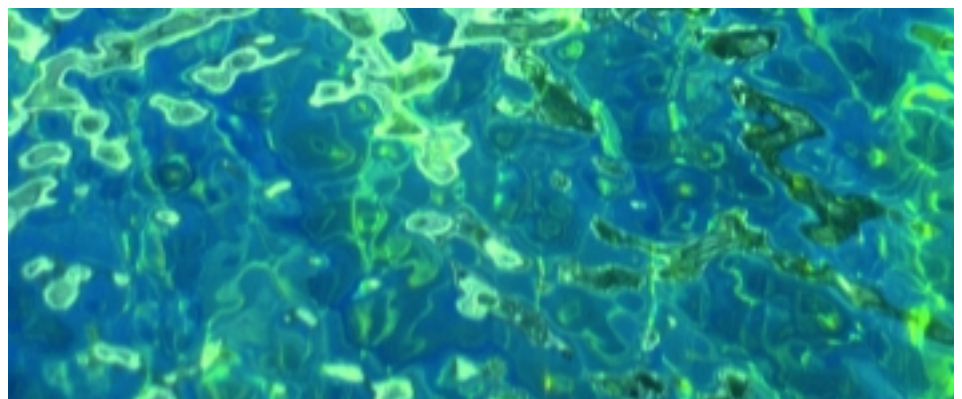
also commented that the international private sector itself is very powerful in imposing arrangements onto Governments.

- Development assistance plays a catalytic role by supporting good governance, which in turn attracts finance.
- The involvement of International Financial Institutions is a source of comfort to the private sector, as well as a catalyst for other sources of funding.
- International Financial Institutions should provide tapering subsidies to bridge the gap between costs and tariffs.
- International financial and trade agreements should acknowledge the costs incurred by poorer countries as a result of climate change created mainly by the richer countries.

Summary of some particularly important points

These points seemed to receive general agreement among most of the people in the Working Group:

- Current levels of investment are too small to achieve our overall development goals, possibly by a factor of approximately two. We should avoid vague global figures, and calculate figures precisely at national level. Finance Ministers demand clear figures.
- We need to mobilise all sources of money.
- The public sector remains the largest and most important source of finance, within which there is an increasing emphasis on the role of local government.
- Regarding the involvement of the private sector, the practical debate about efficient service delivery is more useful than the ideological debate about private sector involvement. However, involvement of the private sector in water remains controversial, with different commentators reaching very different conclusions from the same experiences (e.g. in Manila). Several people called for a multi-stakeholder dialogue on this topic, to progress towards a more measured and agreed analysis of the advantages and disadvantages of private sector involvement.
- The principles and conditions for attracting finance apply equally to public or private finance.
- Cost recovery objectives should not be a barrier to poor people's access to safe water and sanitation.
- All aspects of water, including drinking water and sanitation, can produce economic growth, while economic growth in turn enables increased investments in water.
- If we as sector professionals believe that the financial and/or coverage targets are unattainable, we should clearly say this to the political leaders, to make their leadership responsibilities clear.



II.7 Facilitator's Report on Working Group C

Capacity Development and Technology Transfer

WORKING GROUP C Capacity Development and Technology Transfer International Congress Centre – Bundeshaus Bonn: Bundesrat	
Lars Engfeldt, Ambassador, Ministry of Environment, Sweden	Chair
Claudia Martinez Zuleta, Vice-Minister, Ministry of the Environment, Columbia	Co-Chair
Alison Drayton, Policy Advisor, Bureau for Resources and Strategic Partnership, United Nation Development Programme (UNDP)	Rapporteur
John Soussan, Director, Centre for Water Policy and Development, University of Leeds, United Kingdom	Facilitator



John Soussan, Facilitator of Working Group C.

Introduction

Working Group C shared five sessions of lively and passionate discussion. Although there were many points on which very different perspectives were raised, the atmosphere throughout was one of sharing of ideas and seeking to build consensus

on topics that were by their nature contentious. The outcomes of these discussions are presented in this report, though there is no space to do real justice to the full range of the debates.

Session 1: Education and Training

Keynote paper: Janosh Bogardi of UNESCO – Education and Training for Water Wisdom.

Case study: Ngoni Mudege of IWSD Zimbabwe – Capacity Building for River Basin Management from a Communal/Rural Perspective.

Case study: Victor Sigismond Kanu of Sathya Sai Education, Zambia – Value-based water education for African cities.

Three excellent papers were followed by a lively discussion in which different dimensions of education and training for water resources management were explored. The need for human capacities was recognised as a key for poverty reduction and sustainable development. Good knowledge is seen as the foundation of good decision making, mutual understanding and the mitigation of conflicts.

The need to build human resources at all levels was stressed, from the community level to the

highest level of professional and technical knowledge. These need to be integrated into structures where they complement each other and where respect for different forms of knowledge is given. Stakeholder involvement at all stages was stressed. The potential of traditional and local knowledge to complement more formal, scientific knowledge and training was emphasised. Formal training, non-formal training and awareness raising were all seen as of equal importance.

The three papers gave excellent examples of how to achieve these goals from different levels. Bogardi introduced WETWAVE, an international initiative to create greater knowledge sharing and environmental awareness that takes full advantage of modern communications technologies. The paper emphasised that expanding capacities was a pre-requisite for expanding investments and achieving goals in the water sector. The need for new leadership in the water sector was emphasised.

The two case studies gave examples of how community-based knowledge enhancement in rural and urban areas of Africa can be developed. Both emphasised the importance of creating sustainable capacities for knowledge development. This was recognised as a process that will need sustained support. Both the type of knowledge needed and the capability to deliver vary between places and over time, so the need for flexibility in the approach to both building educational capacities and operating education and training programmes was emphasised.

The discussion built on the papers to draw out the specific targets for education and training. The need for professional skills was acknowledged, but great emphasis was placed on the ability to reach young people in particular. Poor communities and women were also identified as key targets, as were politicians who were generally felt to need to be better informed. For all, and especially for the young, the medium was recognised as being important as the message and the use of popular culture and media was seen as being as important as more formal educational media.

Session 2: Sharing Knowledge

Keynote paper: Arthur Askew, WMO – Data management for implementation, transparency and co-ordination through sharing.

Case study: Walter Julich of RIWA – The Netherlands, the Rhine: mutual benefits from data sharing.

The second session continued where the first left off, with the importance of knowledge sharing emphasised. Askew provided a context for the discussion by describing the chain from data through information and knowledge to wisdom. The importance of all stakeholders participating in all stages of this chain was again emphasised. This led to discussion of knowledge, and sharing of knowledge, for whom? In particular, the need to identify what needs to be learnt at which levels was emphasised. The need to blend different forms of knowledge (especially community-based and external) was reiterated. The critical role of sharing knowledge through effective, legitimate, transparent and understood systems as a driver of decision-making and allocation regimes was emphasised if conflicts are to be avoided.

Several contributors commented on the problems associated with the reduction of resources available for collecting hydrological and other data, as this was the foundation upon which wisdom is built. The massive richness of knowledge worldwide was a topic that was discussed, with in particular a plea to avoid duplication, reduce costs and share experiences through knowledge sharing structures emphasised. This was seen as particularly important as the world moves towards integrated, multi-disciplinary approaches and towards management over larger units (especially international river basins).

In this, the practical experiences and conditions for success drawn out by Julich in the case study of the Rhine provided important insights. The approach in this case was action-oriented, based on an analysis of who need to know what when, how can actions be taken and how can consen-

sus based on compromise and respect be built.

A theme that ran through this session was the need to balance the need for data, information and knowledge (including sharing them) with the delays and costs that go with using it to inform decision-making. Knowledge for a purpose, not for its own sake, was seen as the goal. To this end, the need for optimal ignorance: defining not how much, but rather how little needs to be known to make good decisions. Emphasis was placed on good quality information at the right time.

A lot of emphasis was placed on sharing knowledge with local communities, including properly recognising and building from their existing knowledge base. Avoiding "arrogant science" was emphasised. This needs to be done within a context that recognises the social and institutional settings through which knowledge is shared.

The importance of preparing and presenting knowledge in forms that are understandable by non-experts was also stressed. This included all forms of knowledge, but especially referred to more technical knowledge and the use of indicators on which policy and allocation decisions are based. The need to have dynamic, flexible and responsive knowledge sharing was emphasised, though difficulties in achieving this were recognised. It was felt by many that this issue as presented in the draft "recommendations" and in many places was very Northern-oriented and tended to re-invent wheels. There is a need to define the processes through which dynamic, equal sharing of knowledge works.

The value of sharing knowledge as a basis for establishing trust, building collaboration and mutual understanding and avoiding conflict was emphasised as one of the most important conclusions of the session. It was also seen as a key to establishing the social and political support for making difficult decisions and achieving change to management and allocation where these are needed.

Session 3: Effective Institutions

Keynote paper: Torkil Jonch-Clausen, GWP, make water institutions, whether public or private, effective and attractive.

Ingvar Andersson, UNDP, Making effective water institutions in Africa.

This was recognised as an extremely broad issue that had resonance in all aspects of water resources issues. Indeed, the comment was made that there could (perhaps should) be a one week international conference on just this issue. The need for effective institutions was incontestable. The key issue is how to achieve this, and in particular what does 'effective' mean and through what sorts of mechanisms can capacities be enhanced to achieve this.

The need for including all aspects of water resources management in institutions was raised. IWRM provides a framework for this, but the Jonch-Clausen emphasised in his paper that this should not be seen as a technical exercise, but rather as a process that operates at all levels and has key social and political dimensions. The importance of establishing an enabling environment for IWRM was also stressed. The issue of different levels of institution was also emphasised by Andersson within an African context, with the need to ensure effective links between different levels and across different sectors (both vertical and horizontal integration) stressed.

This theme was discussed at length, with different aspects of what makes institutions effective analysed. Links to earlier sessions were made through the emphasis on the importance of transparency and on access to information as key pre-requisites to effective institutional processes for water management. This information needs to be widely circulated, including to NGOs, the media and the political process to ensure adequate levels of accountability and the exposure

of decision-makers to wider scrutiny. This was seen as the basis for addressing corruption, agreed by all to be a major constraint upon the development of effective institutions.

One recognised barrier to the development of effective government and other institutions in the developing world was the problem of retaining qualified and experienced staff. Indeed, the haemorrhaging of staff who were trained under capacity building programmes was seen as at times making such programmes counter-productive. The need to develop proper incentive schemes to retain staff and ensure effective institutions was a key theme.

The need for inclusive institutions was also discussed at length. This is particularly an issue with regard to local-level institutions, but the need to make sure that higher level institutions are representative of women, the poor and socially and politically marginal groups was also stressed.

Overall, the theme of the discussion in this session was felt to be subsidiarity – devolving authority to the lowest appropriate level. As part of this, actions were needed to ensure that the different levels to whom authority is assigned have the knowledge, desire and resources to meet their new mandate. The scope for South-South sharing of experiences and expertise was felt to be a great and under-utilised resource for meeting these challenges.

Fragmentation between levels and between sectors is the key challenge, with what is needed where reflecting local conditions but this felt to be a general characteristic of water sector institutions. Actions at all levels to improve integration and harmonisation, to develop an enabling environment and to ensure that institutions are representative, transparent, legitimate, efficient and sustainable are the key.

Session 4: Innovative Technology for Water Efficiency

Keynote paper: Ralf Otterpohl, University of Hamburg – Water efficiency through innovative technologies.

Case study: S.M.A. Rashid, NGO Forum Bangladesh, Bangladesh – Rainwater harvesting, household-centred approach, access to basic services, low-income rural settings, social, technical and financial sustainability.

The session had a very lively discussion on the whole issue of technology sharing and efficiency. The group concluded that the title and

approach were both too restrictive, with the concentration on water efficiency and on technology transfer interpreted as a North-South process. Rather, the importance of learning from and working with a wide range of technology opportunities that were appropriate to widely ranging needs and circumstances was stressed.

Many contributors emphasised the need for technology sharing at all levels. But these must be the right technologies: technologies that are affordable, efficient, can work in specific circumstances, are sustainable (especially an issue for advanced

technologies) and are fully understood by policy makers and other recipients.

There were important questions regarding the institutional processes through which technological change takes place. The need to establish the principles through which this can be achieved was recognised, as was the need to develop technology sharing that gives more choice. Several questions stemmed from this. What changes are needed to realise choice? Do decision makers have the information and other means to access the alternatives? What changes are needed to the financial and administrative procedures through which international financial and development assistance works? How do we create the political and institutional choices and the institutional support for these processes? Above all, what is appropriate technology?

The tendency to peddling redundancy and transfer the wrong technologies was discussed at length, as was the need to know what alternatives exist. The dangers of conflicts of interests where development assistance is involved was recognised. That there are many technologies for all aspects of water management was also recognised: the issue is not so much research as application.

Many speakers again emphasised the value and potential of traditional and local technologies, and the negative impacts that come where these

are replaced with external 'high tech' alternatives without proper regard to their appropriateness. The need for transparency and sharing, including far more extensive South-South sharing at all levels, was recognised as a key issue for the future. Many types of technology were referred to in the papers and the discussion, including sanitation that uses low quantities of water, rainwater harvesting, wastewater recycling, improvements to irrigation and groundwater extraction and others.

The importance of private sector involvement and the use of market mechanisms for technology dissemination was agreed, with the caveat that there needs to be effective regulation of market operations. This included a call for strong government-private sector partnerships. The potential of the market in creating income opportunities for poor people through technology dissemination was discussed, as was the potential for sustainability that effective markets can offer. Government was seen to have a responsibility to create an enabling environment, including incentives and regulation, for market operations.

The central importance of seeing technological innovations within the context of their impacts across ecosystems as a whole, and not just at the point of use, was identified as a key criterion for their adoption.

Targets & Indicators:

The session included a discussion on indicators for global and national targets for water management. This picked up on issues raised in Working Group A, where the importance of targets was recognised but the need for effective monitoring of targets was seen as a critical issue. In particular, their role in guiding and assessing policy and investment priorities and decision-making was seen as a very positive force.

The discussion identified the importance of indicators, including a conclusion that they are important in their own right and not just in relation to specific targets. Without indicators, it was agreed that it is difficult to assess progress. It was agreed that the development of indicators should be a focus for the sharing of knowledge, not least because it provided a purpose and clear precision to this process.

Indicators were felt to be the basis for accountability and transparency. If used well, they form a basis for dialogue between different stakeholders. As part of this, the potential for developing indicators through participatory processes, where their exact form is based on different stakeholder perspectives, was recognised. The discussion

agreed that the development of targets and indicators is invaluable in providing a clear and more precise base for international discussions and interactions, as they require a level of exactness that is often lacking. In this sense, targets and indicators are powerful tools in advancing international discussion and understanding and should be seen as dynamic tools.

Many good comments were made on what sorts of indicators should be used, including a strong consensus on the need to ensure that the ecological dimensions of achieving targets were included. Overall, it was felt that all sets of indicators should make a strong link to overall ecosystems processes. Issues such as efficiency of use and water quality were felt to be important.

The discussion concluded by proposing that the World Water Assessment Programme should take a lead in developing indicators for both the existing international targets (as stated in the Millennium Declaration) and for potential new targets (such as those advanced by the UK and Sweden in Bonn) to assess whether these new targets could be viably assessed through robust indicators.

Session 5: Extreme Events

Keynote paper: Zbigniew Kundzewicz, Polish Academy of Sciences – Coping with climate change and variability.

Keynote paper: Roberto Lenton, Columbia University – Governance arrangements, integrated management approaches and partnerships needed to allow water managers to cope more effectively with climate variability.

Case study: Chaiyuth Sukhsri, Mekong River Commission, Mekong River Commission: coping capacities for floods, preventative strategy for drought.

The papers demonstrated that both the frequency and the impact of extreme events is increasing and that this is an issue that will become more prominent in water policies at both national and international levels. The overall discussion was one where it was agreed that a wide range of measures are needed to adjust to these events at all levels, from local to national and international. Actions should be based on a mix of site-specific structural and non-structural approaches.

The importance of linking disaster management and development was stressed, as was the need to take account of all stages from prediction and preparedness through disaster relief to post-disaster recovery. The basis for this must be improved flexibility and the adoption of systems for decision-making under uncertainty.

Lenton's paper presented an excellent analysis of the governance issues raised by extreme events, issues that were generally felt to be the key to coping with disasters. His call for developing "win-win" models, where actions to cope with and adapt to the present situation should be done in a way that also improves long-term capacities to cope with future, more severe, problems. This approach should be integrated into

water resources policies, which should include risk management and flexible processes as key characteristics of an integrated approach.

The need to strengthen links between water policy makers and managers and other sectors (climate, environment, coastal zone development, others) was seen as fundamental to this. In other words, integration is not just within the water sector, but also between water and other sectors. It was agreed that future uncertainties mean that the approach to changing policies, governance and management practice should be flexible and evolutionary, adapting to needs as they emerge.

Strong lessons on how to achieve this were available from the Mekong River Commission case study, with a process that started out with humble ambitions around data integration and is gradually evolving to include collaboration on a wider range of issues as confidence and understanding is built and as specific needs (such as in capacity building) are identified.

Overall, it was recognised that disasters will happen however much is invested in trying to prevent them. The keys are to be able to predict when and where they will happen, to have taken actions to lessen their impact when they do happen and to make sure that there are robust and effective systems to respond to them when they occur. This involves actions at and partnerships between all levels. The potential of traditional coping mechanisms was recognised and the approach should be to build upon these within the wider development context.

Finally, the high political profile of disasters was recognised, both because their impact is often dramatic and because it is one area where the populations of developed countries share experiences with those of developing countries.



Extreme water events are recorded more frequently.

II.8 Report on Gender Plenary Session

Integrating Gender Perspectives – Realising new Options for Improved Water Management



Jennifer Francis, Facilitator of the Gender Plenary Session.

Gender Plenary Session V Integrating Gender Perspectives – Realising new Options for Improved Water Management International Congress Centre – Bundeshaus Bonn: Plenary Hall Bundeshaus	
Bärbel Dieckmann, Major of Bonn, Germany	Chair
Diane M. Quarless, Deputy Permanent Representative, Permanent Mission of Jamaica to the UN, Jamaica	Co-Chair
Jon Lane, Consultant, Water and Sanitation in Developing Countries	Co-Chair
Jennifer Francis, Executive Secretary, Gender and Water Alliance	Facilitator

Presentation: Water, Gender and Poverty

Ms Barbara Schreiner, senior water resource manager in the Department of Water Affairs and Forestry in South Africa, mentioned several key points that have been raised. Particularly important are:

The recognition of the importance of water in today's world. The way water is managed needs to be changed if we are to achieve sustainable development.

A gender-sensitive approach is one crucial part of that change. Poverty eradication is crucial to the future of the world, and a key element of sustainable development.

By understanding the different roles of women and men in water management, recognition is given to the roles of especially of poor women

and men. On this basis it is necessary to change the power balance so that women and men, at all levels of society can participate equally in the management of water.

A gender-sensitive approach is not limited to the development of an appropriate policy, but to its implementation through a concrete strategy. Such a strategy has a number of facets, a key one of which is training and capacity building. Other elements include facilitating the equal participation of women and men; setting clear targets and indicators of success; and setting up conflict resolution mechanisms. Above all, such a strategy requires those with technical expertise to learn to listen, to especially poor men and to poor women who have important expertise and understanding of their own experience to bring to the table.

Major Points of Discussion

The discussion was focused on three main issues:

- Integration of gender perspectives at the policy level
- Implementation of gender perspectives at the institutional level

- Implementation of gender perspectives at the project level

The discussion looked at good examples as well as obstacles and derived at the following:

- Poverty alleviation goes hand in hand with

gender integration as it takes into account the different needs of women and men and balances the scale through equitable distribution.

- Gender is a crosscutting issue and should be mainstreamed within the integrated sectoral approach. It is no longer a stand alone issue.
- Change in legislation is still required to ensure the equal rights of women and men to water.
- Implementation of gender policies should be developed at all levels from international and national levels.
- There is a need to collect gender disaggregated data to reflect existing inequities. With this monitoring of progress is possible and where necessary affirmative action can be taken to improve the situation.
- Traditional roles of women have to be recognised. However, it is crucial to look into the distribution of work, decision making and benefits of development.

- Water is vital to improving the lives of women, however education and training for women and girls are just as important for water security.
- Technology should be checked for its appropriateness before it is transferred to developing countries.
- Implementation of gender perspectives has proven to be very successful at the community level but is still difficult at large scales. To improve large scale implementation decentralised decision making is required to promote participatory and innovative approaches as well as commitment.
- The Bonn Recommendations on gender should be followed up during the Earth Summit on Sustainable Development.

Remark: It was recognised, that sanitation failed to be mentioned in the discussion although it is crucial in addressing gender issues.

Policy Implication and Recommended Actions

(Prepared and delivered by the Gender and Water Alliance, of which broad consensus was reached in the plenary.)

- Planners must include a gender perspective systematically in the development of all national and regional water resources policies and programmes.
- The collection of gender disaggregated data by governments and all water management organisations is essential to distinguish differences in needs, interests, and priorities in water resources management.
- Donors and governments are requested to include gender impact assessments for all water projects, in order to ensure equal responsibilities and benefits among women and men, including distribution of work, paid opportunities and capacity building.
- Water management is closely tied to land tenure arrangements. Governments should revise laws and policies to ensure women equal rights to both water and land.
- All water management organisations from the community to the basin level and higher should include effective representation of women and men of all social strata. Where representation is unbalanced, affirmative action is required based on clear criteria.
- Technology choices, management regimes and regulatory frameworks have different impacts

on women and men. Governments and all water management organisations must analyse and monitor these impacts with feedback at all levels.

- Governments, donors and all water management organisations should target capacity building and training to:
 - Build capacity of women to manage water and related financial resources to improve efficient water use;
 - Increase scientific and technical education of women
 - Support water professionals in integrating gender perspectives in their programmes and projects.
- 98 per cent of rural women classified as economically active are involved in agriculture. Governments and water management organisations must provide training and credit for women to improve efficiency of land and water use for food production.
- The United Nations, reporting under the Convention of the Elimination of Discrimination Against Women (CEDAW) should include indicators relating to gender and water.

All the above recommendations should be monitored and progress reported back to the Johannesburg Earth Summit 2002 and the Third World Water Forum.

III. SPEECHES AND DECLARATION OF AFRICAN MINISTERS

III.1 Opening Session

OPENING ADDRESS BY JÜRGEN TRITTIN

Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany



Jürgen Trittin addresses the audience in the Opening Session.

On behalf of the German government, I would like to welcome you all to Germany for this important Conference preparing for the World Summit in Johannesburg. People often raise a glass together in greeting, and we will also be doing that this evening in the Beethovenhalle here in Bonn. Most of us probably with orange juice, some perhaps with champagne. Water, the subject of our Conference, tends to be spurned on such occasions, even though these delicious drinks could not be prepared without water – neither could wine, cognac, coffee or tea. Yet we place little value on water. We act as if it cost nothing.

If, later on, you order a mineral water or orange juice in the lobby, you will find that you pay almost the same for them: 3.50 or 3.80 DM for a quarter litre. To produce one litre of orange juice in Brazil, however, requires 22 litres of freshwater – and in Florida it is even as much as 1000 litres. Land use and transport costs are also not reflected in the price.

But let us turn back to specifics. For here in Bonn we want to develop specific recommendations for action concerning sustainable use of our limited freshwater reserves. In order for the results of this Conference to be really viable for the future, we must involve many stakeholders: not only the well-known groups such as industry, agriculture, water management companies, national and local governments, but also, of course, the consumers. All those belonging to the global middle class are also global actors and their behaviour is a decisive factor here.

The Wuppertal Institute, a reputable German think-tank for ecology and climate issues, likes to refer to the image of ecological footprints, namely, those of the Northern consumer, stamped on the land and resources of the South. The consumption habits of the North are copied throughout the world. Soft drinks, for example, are also highly popular in Africa and India. Consumption trends and lifestyle are consequently important themes for a future-oriented freshwater management.

I am therefore pleased that NGOs and representatives of Local Agendas are participating in this Conference. For they are best placed to communicate

this problem to the people. I do not mean, however, to absolve the state of its responsibility. On the contrary, the guiding influence of the state is necessary to allow product prices to reflect the value of this irreplaceable sustenance.

This Conference in Bonn should send out a signal to national governments to assume real responsibility for the conservation of their national water resources. This is often a question of competencies within the Cabinet. Some countries squander their freshwater in order to export cheap agricultural produce.

This not only applies to developing countries with no other export products at their disposal, but sometimes also to countries which certainly do have other options. In some cases understandable historical reasons or questions of identity also contribute to the situation. A high-tech country exports its groundwater along with its oranges – even though it has other alternatives for export. An arid country with valuable mineral resources enjoys the luxury of being one of the world's biggest grain exporters. Without long-term buyers, however, there would be no product. Our behaviour as purchasing countries is no more sustainable than that of the producing countries. We buy, in the shape of products, the water which the local population has far greater need for. This applies to all of us.

Freshwater consumption, however, is only one of our topics. We will also consider the issue of access to water, and the pollution of, or rather the cleanliness of water.

1.2 billion people – that is one in five – have no access to adequate and clean drinking water. The United Nations Millennium Declaration calls for this proportion to be halved by 2015.

On my first visit to Eritrea following years of devastating war there, I noticed one thing in particular: above all women and girls in many rural areas travel for hours to the river and haul a 20-litre water canister home on their own backs. 20 litres – that is the daily ration for a family of five. These 20 litres would be a lot more expensive to buy than it would cost in Germany for the daily requirement of 130 litres per person.

Even today, this is common practice in many countries. Due to the lack of water, skin diseases are commonplace. Infant mortality is high. Girls of eight or ten years old already suffer from spinal damage. Daughters especially remain illiterate, since if it takes them several hours simply to fetch water, they have neither the time nor the strength afterwards to attend the school two hours away. The problem of poverty and under-development, specific to women, continues to affect the next generation.

As long as the water supply remains bad, we will still have a two-tier society, divided by gender. In many rural areas of the developing world, equality and empowerment can only be achieved – for the vast majority of poor people, at least – if there is a better water and energy supply. In light of this, the solar powered water pumps which we supplied to Eritrea at that time not only alleviated acute hardship, but also played a role in emancipation and development.

In both North and South we are faced with the question: should water remain a public commodity, or is its privatisation acceptable? What is appropriate for electricity, gas and telecommunications cannot be applied to water. Drinking water is as irreplaceable as the air we breathe. Providing citizens with an adequate supply of high quality water is a public task for services of general interest. And it must remain so. There is a broad potential for activity for the water industry with regards to infrastructure, but qualitative supply security and the principle of sustainable development must have priority over market forces, not take second place. We retain the right in Germany to quality control. We will not allow water body protection to be undermined.

Many developing countries fear increased privatisation and liberalisation in the water industry. Companies could buy their way into the water supply systems – supported by financial institutes – and for economic reasons introduce prices which poor families can no longer afford.

I believe these fears are certainly justified, but also feel that dialogue and co-operation with private industry are important. For there are, in some developing countries, high levels of direct investment. Private sector commitment in successful developing countries could ease the burden on development aid. But private industry should then really do this on its own – not use composite financing as an indirect way of obtaining development aid grants.

After consumption and access, let me now broach the third major problem: the quantity and quality of water. If water dries up, or becomes undrinkable, people must leave their homes. This can push the numbers of environmental refugees even higher. Today there are already more refugees from environmental disasters than from wars. Unless we

make rapid progress in the field of climate protection, desertification will affect even more landscapes. For this reason I also want to use this Conference to appeal to you: help achieve ratification of the Kyoto Protocol in your countries.

Pollution of water can also become a source of international conflicts. The Millennium Declaration of the United Nations therefore calls for a balanced and adequate water management. We also need to improve international liability law to punish water pollution caused by negligence, and to relieve injured parties.

In areas where riparian states cooperate, water is even a catalyst for good, transboundary understanding between neighbours. There are many examples of success: the co-operation along the Nile, the Mekong, and the Great Lakes of America, as well as our own international rivers, the Rhine, the Danube, the Elbe and the Oder.

In both North and South we need to give agriculture a new ecological direction, giving priority to water body and health protection in this sector too. Germany has by no means solved all its water problems. Certainly, 99 per cent of households do receive clean drinking water from the public supply, and 93 per cent are connected to a sewage facility; the water bodies have become much cleaner – every summer, many children and adults imitate Klaus Töpfer's famous dip in the Rhine, which he took at the end of the 80s, to demonstrate how clean it was. Nevertheless, by 2015, we want to achieve an even better ecological status of water bodies by implementing the European Water Framework Directive.

Ladies and gentlemen, in conclusion I would like to refer to the "cetero censeo", – the conviction – of the German government. We are not, like Cato, calling for the destruction of Carthage, but for a binding and future-oriented "rules of the house" for our planet. A large home, inhabited by so many, needs such "rules" as well as a strong caretaker. I therefore support the proposal that the Johannesburg Summit should upgrade the United Nations Environment Programme in Nairobi (UNEP). We must have the prospect of further developing UNEP into an international environmental organisation. We need an institutionalised advocate of global justice in the field of environmental protection and ecology, which can also stand up to the WTO.

Delegations have come from over 120 countries. I am delighted to see you all here! In the run up to the 1992 World Summit politicians were motivated by a spirit of Rio. I hope – and I am counting on your help – that we will be able not only to activate a spirit of Johannesburg, but also to achieve in Johannesburg a global pact on sustainable development.

For we only have one Earth – with six billion people on it – and there is no spare.

OPENING ADDRESS BY USCHI EID

Parliamentary State Secretary in the Federal Ministry for Economic Co-operation and Development, Germany



Uschi Eid, Co-Chair of the Opening Session.

I would like to welcome you most cordially to the International Conference on Freshwater. I am very glad that you all have taken the long trip to Bonn. The Minister for Environment and the Development Minister have invited you for a joint consultation on the next steps and actions needed to help us make headway on solving global water problems.

The Importance of Water for a Decent Life

There are only few things that humans really need in order to exist and survive in times of need. One of these is undoubtedly water. This is why we say that the right to water is part of the human right to an adequate standard of living as recognized for all people in the International Covenant on Economic, Social and Cultural Rights.

Today, many – too many – people lack access to clean and safe water. Experts tell us that out of the total of six billion people, about 1.2 billion do not have access to sufficient and hygienically safe water and that some 2.5 billion people do not have decent sanitation.

These are very abstract figures, but we get a better picture of the dramatic situation if we see the people behind them:

- I am thinking of the women and young girls whom I have met in Southern Africa. They spend many hours every day fetching water. They could make better use of that time learning how to read and write and preparing for a job.
- I am thinking of the children in the slums of big cities who play between streams of wastewater. Many of them suffer from disease because even the most simple infrastructure is lacking. Too many of them die from it.
- I am also thinking of farmers, for instance in Central Asia, whose fields dry out because political decision-makers in the past failed to pursue sustainable agricultural and water policies.

One aspect is particularly important to me in this connection: There is enough water for everyone in this world! So it is a matter of political will and political action for us to distribute it fairly, use it efficiently and respect the limits to the strain our ecosystems can take.

Poverty and Access to Water

For centuries now, people have lived with the risk of drought and dry periods – a risk forced upon them by nature. Today, however, we find that access to water is – not least – a social issue. Poverty and access to water are mutually related:

many people are poor because they have no water, especially in rural areas. But even more people have no water because they are poor.

It is the latter that is the true scandal which we need to talk about today. It is the poor who face a higher risk of disease because they cannot afford expensive bottled water. It is the poor who have to pay more for water to mobile sellers because they have no access to tap water. It is the fields of the poor that are the first to receive no more irrigation water when there is a shortage.

At this conference, we need to give attention to these links between poverty and water. While it is very important to improve competent water management, this will not be enough to actually improve the living situation of the poor. In addition, the interests of the poor need to be taken into account in planning and decision-making processes. If, for instance, there are plans for a new big water dam we need to ask: How will this benefit the poor? What are the risks we create for them with this dam? Will they benefit from the water in the reservoir or will water actually be taken away from them? Will they benefit from the power to be generated? – In many cases, experts have not given us satisfactory answers to all these questions. We must push for deeper examinations of, and better answers to, these questions.

It has been not least in recognition of these mutual links that poverty reduction has now been given a prominent role on the international agenda. At the United Nations Millennium Assembly in September 2000, the international community adopted the goal of halving the proportion of people in extreme poverty by 2015. It is also resolved to halve the proportion of people who are unable to reach or to afford safe drinking water.

We are all committed to work for these targets. The German government has taken this commitment seriously and thus adopted a Program of Action for Poverty Reduction defining our contribution towards reaching this international goal. This program is owned by the entire government, because if the necessary progress is to be made, all policy areas must be "on board," with a view towards achieving coherent overall policies, with regard to better market access and improved prospects for the developing countries in the globalized economy, with regard to protecting countries from outsiders damaging or exploiting their natural resources, and ultimately, with regard to designing a new, more equitable world order which gives the poor more opportunities for a decent life.

Water: A Key to Sustainable Development

"Water, a key to sustainable development." At this Conference, we will be talking about sustainable development and about the significance of water for it. Sustainable development is important to us in all its three dimensions: economic, social as well as ecological. It is vital to integrate the three dimensions in practical policymaking because they are inextricably linked with each other: if there is no economic and social progress, many countries will not be able to "afford" environmental protection. And vice versa, societies with strong economies will not be viable if they do not take account of the limits of the earth as an ecosystem and of the ability of natural resources to regenerate.

Therefore, it is a good thing that the Johannesburg summit will be a summit on sustainable development and not just a conference on environmental issues. The recognition of the fact that no country can achieve economic prosperity if it overexploits its environment or if it allows a deep social divide, has gained growing support over the past few years, and maybe this is the true progress made since the Rio de Janeiro conference! This was what led us to choose this motto for the Conference. It takes us directly to the tasks posed by the Johannesburg summit.

Focus on Action

The past few months, the terror attacks of September 11, have demonstrated to us that it is not only trade, technology and information that are of a global nature, but threats and risks as well. No one can deny anymore that the living conditions prevailing in other countries are of direct relevance for our own future too, for our security and our prosperity. In this sense, everyone has realized that we depend upon each other, no matter where we live.

Moreover, the realization is gaining ground that successful efforts for a peaceful and sustainable future are only possible through serious dialogue and long-term, reliable, partnership-based cooperation. This includes a fair balance of interests between industrialized and developing countries and appropriate investment in development. This is why the status of development policy has quite rightly been upgraded enormously over the last few weeks. Let us make use of that, let us work here and now with even more determination for just and sustainable development!

There is a good basis for our actions. After all, this past decade has been marked by increasingly intensive political dialogue within the framework of the United Nations. This dialogue has produced results: there are now dozens of global action programs. As internationally established principles and commitments, they form a valuable and important source of reference and basis for action which no country can ignore anymore!

Unfortunately, much of this only exists on paper so far. This is why I advocate making this new decade a decade of action. What we need now is not new principles but more, and effective, implementation. This is why the focus of this Conference is on action and on learning from successful examples and experience.

This is reflected in the three cross-cutting issues of our Conference

- The first cross-cutting issue relates to governance, integrated management and partnerships. In this context, I expect, among other things, a commitment to public responsibility for water resource management, for safeguarding water resources and water quality, ensuring delivery to the poor and taking account of gender aspects.
- The second cross-cutting issue focuses on mobilising additional finance, because the investment needed to move closer to the millennium goal is in the billions! Estimates say that there is an annual investment gap of US\$100 billion! We will only succeed in closing this gap if we partner with private players, and this is another area where a solid foundation for action must be laid.
- The third cross-cutting issue deals with improved capacity building and technology transfer. Capacity building should be understood in a comprehensive sense here. After all, our concern is both to engage in research – interdisciplinary if possible, developing up-to-date scientific findings on a continuous basis and taking account of these in our practical work, and to reach people of all age groups and educational backgrounds, communicating to them the most important core messages on "how to use water wisely" in their daily lives and motivating them to be more conscious of how they use water.

A Few Remarks to the Delegates

The German government as the host of this conference has tried to provide you with as good an environment as possible for your consultations. But it is you, the delegates, who are responsible for the outcome. And the yardstick of success will be the contribution that this Conference makes to practical and effective action in the water sector. Johannesburg must yield practical results in the three cross-cutting areas I just mentioned.

When we began preparing this Conference, we set ourselves two goals: we wanted to make this Conference as participatory and as transparent as possible. And I hope that on Friday we will be able to conclude jointly that we have reached these aims.

The vast majority of delegates are government representatives, to whom I extend a cordial welcome. Delegations representing over 130 govern-

ments are participating in this Conference, including 50 delegations headed by Ministers.

Furthermore, we are very grateful for the intensive co-operation enjoyed with the United Nations, the World Bank and many other international organizations also represented here. Let me make special mention of the support provided by the UN Department of Economic and Social Affairs. Let me cordially welcome Mr. Desai and Mr. Töpfer of the UN's Environmental Programme.

Another important aspect is the participation of nongovernmental organizations, businesses and civil society. I would like to extend a cordial welcome to these delegates, especially those who represent the young people of this world. Their participation shows that water issues are not just governments' but everybody's business.

The first section of our conference work starting this afternoon is devoted to stakeholder dialogue. We thus send a signal of the importance we attach, as a government, to the views of businesses, labor unions, women, and of the many other stakeholders and players.

All these stakeholders have also taken part in planning the Conference. The International Steering Committee has been preparing the Conference for over a year. I would like to thank all those involved very much indeed.

The preparation process has been as transparent as possible. We have used the internet to provide information about every step taken. And the public took much interest in the Conference: the web-site had on the average over 80.000 hits per months. In the Virtual Discussion Forum, there were far over 100 contributions from all over the world; they were analyzed and used as input for the conference documents.

Concluding Remarks

Let me say a few words about our venue in conclusion. We are here in the former plenary chamber of our German Bundestag, Germany's parliament. In this building, we work right on the shore of the large European river, the Rhine. In history, the Rhine has been the theater of many violent conflicts, especially between Germany and France. The people of Europe have suffered greatly under these conflicts. However, today we view the Rhine as a symbol of co-operation in Europe. The riparian countries have realized that co-operation is much more beneficial than fights over volumes of water and sovereign rights. The intergovernmental commission in charge of Rhine navigation is one of the oldest institutions for intergovernmental co-operation in Europe. So let the Rhine and its dynamism inspire us! In this spirit, I would like to wish us all, a successful conference.

Thank you very much.



The Conference participants are welcomed at the Opening Session.

KEYNOTE ADDRESS BY NITIN DESAI

Secretary General of the World Summit on Sustainable Development

As the first visitor to speak in Bonn, let me begin first by expressing my deep and profound thanks to the Government of the Federal Republic of Germany and the City of Bonn for organising this major event. I believe, this event is particularly significant in the context of the preparations for the World Summit on Sustainable Development in Johannesburg for several reasons:

First of course, it is significant for the reasons that have been mentioned in the Opening Addresses, which is the critical importance of water for sustainable development. There is no way, in which we can get sustainable development in any conceivable sense of the term operational, if we do not address the issue of sustainable water use. In fact, water is a strategic resource. If you manage water use sensibly, at the community level, at the regional level, at the global level, this will inevitably have consequences on land use, forest use and use of other biotic resources as well. In that sense, this conference has an important strategic role: it is dealing with water, but in many ways the improvement of water use is, at the same time, central for all of the other dimensions of sustainable development.

But that is not the only reason why I wish to thank the Government of the Federal Republic of Germany and the City of Bonn for this conference. I wish to thank them for the conference because of the way in which it is structured and the process which has been reflected in its work. Look at the work that has been done in the preparation for this conference, the papers, which are lying in front of us, papers which have been prepared by the Conference Secretariat as well as the papers prepared by the Stakeholders. If you see them, what you see is that they reflect three things, which are very important:

- They reflect the inclusion in our discussions of the best scientific and professional opinion.
- They integrate discussions of the social, the economic and the environmental dimension of water.
- They focus very clearly on practical steps – and one example of this is that they contain many success stories of sustainable water use, and many reviews of lessons learned from different experiments.

This is one important reason, why this process is of such great value to us: the way in which it has been prepared. But it is not just the substance of the papers; it is the process of preparation itself. The big achievement was to bring together scientific and professional opinion, political deci-

sion-makers, and stakeholders in a very open and transparent process. In this meeting as also in the preparatory work we see a rich variety of side events that have been organised by many of the partners, who are present here.

So what will come out of this conference can be said to reflect not just the consensus amongst governments but the consensus amongst what I would describe as a community of concern, a community of Stakeholders, who have the capacity to make a substantial difference to the way water use is managed at every level. This is important; and I have mentioned some aspects of the process, structure and content of this conference, because I believe that it is a very good example of what we need to do in Johannesburg. Johannesburg must also make the same effort at bringing together the entire community of concern for sustainable development in this type of open, participatory process.

Let me then turn more specifically to the Johannesburg process itself: but in order to do so, I really want you to look at Johannesburg as part of a broader process of strengthening multilateralism which has become even more urgent taking into account the recent events in September.

Many people are linking three conferences together.

- Doha, the Conference on Trade, which has just been completed,
- Monterey, the International Conference on Finance for Development, which will be held in March and of course,
- The World Summit on Sustainable Development in Johannesburg in September 2002.

Many people are connecting these three conferences; they see the sequence of Doha, Monterey, Johannesburg. It is not that the other events that will take place during this year at the global level are not important; we will of course share the World Assembly on Ageing in Madrid, the postponed Children Summit +10, the postponed World Food Summit +5. But the reason, why people focus on these three – Doha, Monterey and Johannesburg – is because these three are the real test for multilateralism, the real test for how effectively we run a political process to secure the willing co-operation of countries with diverse interests. All three of them require a deal to be struck, between rich and poor countries, between large and small countries, between resource-rich and resource-poor countries, when we are talking of trade, talking of financing, talking of sus-



Nitin Desai addresses the audience.

tainable development. It is in this sense that these three are connected. In some ways, what we sought to do in Doha was to put sustainable development into the world trade agenda. Of course, whether we succeed or not is going to depend on how the negotiations shape up, but certainly the general assessment is that to a substantial extent in terms of the agenda for the negotiations, this has been achieved. One of the things, you have certainly seen referred to much in the press lately, is how effective developing countries were in Doha – good for them. In Monterey, we are trying to put development into the agenda of the world financial system. It is a system which has been run essentially from the point of stability etc. – in the way world finances work. What we are trying to do in Monterey is to say that development finance is not just something that you do on the side. It is something that must be integrated into the way the world financial system operates. And I believe that there are very good chances that we will succeed in this; I have just come from the Ottawa Meeting of the Finance Ministers and I am very hopeful that in Monterey we will succeed in doing – in the world of finance – what we did in the world of trade in Doha: put development into the agenda of Finance Ministries and of the financial system.

What then is the Agenda of Johannesburg?

The Agenda of Johannesburg is to put sustainable development into action.

Taking into consideration the gains that we have made in Doha and in Monterey, our challenge in Johannesburg is to move from this to putting sustainable development into action. I will not go into the details of this, you will have the opportunity to discuss this in the course of your work during the next four days and it would be unnecessary for me to dwell on this at great length here.

But clearly, when we look at Johannesburg now, we have to recognise that – whichever way you look at it – our performance in implementing of what came out of Rio Conference is inadequate, whether we think of it in terms of our success in meeting needs – surely we have not done that – if we look at the persistence of poverty, hunger, disease and malnutrition in terms of our capacity and ability to meet such needs in future, which we surely have not done if you look at what is happening to the environment at every level. But what we have to do there is not just to get up there and say, "Look we must implement what we have agreed on", we must ask ourselves what more we need to do in order to do this. But we also need to take on board some of the changes, that have taken place since Rio: globalisation and the new technologies, that have become far more prominent now than they were in 1992. We need to take that on board, take that into account to see what implications it has for the processes of implementation of Agenda 21.

We have to address many of the deficiencies that we have spotted at the institutional level and see how to address them. We have to strengthen the institutions which are vital for the implementation of sustainable development at every level – the community level, the national level, the regional and the global level. And in some ways this institutional agenda is crucial, because perhaps one of our greatest weaknesses has been the inability to integrate the three dimensions – the social, the environmental and the economic – because they are necessarily cut across mandates of many different line ministries, line departments and many different organisations at every level. We have to address the disappointments with regard to the means of implementation in financing and technology transfer.

But in order to really get a certain amount of commitment regarding implementation, I would suggest – and that is what we really have to do in Johannesburg – to connect what we did in Rio with the great goals and targets that have emerged in the course of the past decade in the world system.

Let me take the Millennium Declaration: Several people have referred to the explicit references in the Millennium Declaration to the dimensions that we are talking about here. When our Presidents and Prime Ministers met last year in the Millennium Summit, they committed themselves to say that we have to spend more effort to free all of humanity, and above all, our children and grand-children, from the threat of living on a planet irredeemably spoiled by human activities and with resources, which will no longer be sufficient for their needs. And they went on to talk about the current unsustainable patterns of production and consumption that must be changed in the interest of our future welfare and that of our descendants. More specifically in the case of water, there have been several references to the commitment

- To stop the unsustainable exploitation of water resources by developing water management strategies at the regional, national and local levels, which promote equitable access and adequate supply – and
- To halve the proportion of people who are unable to reach or to afford safe drinking water.

These are the commitments which are specifically related to the Agenda, that we are discussing. But that is not what I want you to connect it with; what I really want you to connect the Agenda with is the broader goal:

- To halve of poverty by the year 2015.
- To reduce infant mortality by 2/3 by the year 2015.

Take the first goal: 70 per cent of the world's poor live in the rural areas of the third world. Their

poverty is not going to be eradicated simply by handouts, subsidies or target-oriented schemes which simply address the disabilities of poor households. Their poverty cannot be addressed unless we also address the quality and the productivity of the resource base on which they depend, which is water, land, biotic resources. There is no way we can meet food security concerns in these parts of the world and the poverty concerns in the rural areas of the Third World without addressing issues of sustainable agriculture and rural development. We need to integrate this dimension and recognize in this context that the issue of water is crucial. A substantial proportion of these 70 per cent of the poor, who live in the rural areas of the Third World, live in water stressed areas. And therefore the agenda of addressing the productivity of the resource base becomes very much an agenda for water management. In that sense, what we need to do is to connect our sustainable development agenda for water with this goal of halving poverty. It is not a matter of co-ordination, it is not a matter of saying that the Water Resource Program, the Land Program and the Anti-Poverty Program have to be co-ordinated. It is a matter of integration. Making sure that the poverty reduction strategy papers, which have been prepared now, include the resource dimension and making sure that the area development schemes, which are being implemented by different people, include the anti-poverty component.

Or take for instance the goal of reducing the infant mortality by 2/3: that goal cannot simply be achieved by immunisations etc. These are important, but if you want to address that goal, you will have to address water, sanitation and urban air quality, because we know that a significant proportion of the morbidity amongst children is because of these factors. And that is the connection that we need to make.

There are other connections, that I could speak of: I remember for instance a nutritionist telling me, that in her assessment, if you look at the nutritious status of children, the greatest single benefit to that is not supplemental nutrition programmes but improved water supply, which simply increases the uptake of nutrients from their normal diet. Or I remember Gertrud Mongela from Tanzania, who was the Secretary General of the Women's Conference in Beijing, telling me that in her area, in Tanzania, the biggest impact on girls' education came from the improvements of water supply, which allowed girls to reduce the amount of time they were required to go out and collect water, and instead they could attend school. So there are many other connections, that we can make; and I believe this is our challenge in Johan-

nesburg, to connect areas which have been looked at separately by different groups and mobilising around goals and targets, which have a strong political resonance, similar to what we read in the Millennium Declaration and elsewhere. And that is what we have to work towards, and what we have to achieve in Johannesburg is what I sometimes call the three Ps:

Political will

A political will which is expressed not only when we meet there, but which will sustain beyond that meeting. And that is where particularly the involvement of the stakeholders and civil society is so important, because it is a crucial instrument in maintaining this commitment beyond this conference.

Practical steps

Practical steps are needed at a programmatic level, because that is what the world is waiting for. Possibly built around certain key goals and targets with a clear sense of where the resources are going to come from.

Partnership

It is increasingly clear that the implementation of sustainable development requires everybody, all stakeholders to act together.

These are the three Ps, we are aiming at: Political will, Practical steps, Partnerships.

And in many ways the process, you have here, reflects this. And that is why I have described it right at the beginning as something which in some ways is a trailer for what ought to be reached in Johannesburg on the broader spectrum of issues.

Let me conclude, Mr Chairman, with the question of what should be the spirit of Johannesburg? We speak of the spirit of Rio, and at Rio one could say that the spirit of Rio was that humanity recognised it stands at a defining moment in its history, which in fact is the very first sentence of Agenda 21.

What is the message, we must go home with in Johannesburg? I believe that the message we must go home with in Johannesburg is, that humanity has taken the decisive steps towards global co-operation for Sustainable Development, linking together not just governments, but all people across national boundaries.

I look forward to your involvement and participation in this and I am sure you are able to make a great contribution to this great process.

Thank you very much.

KEYNOTE SPEECH BY KLAUS TÖPFER

Executive Director of the UN Environment Programme (UNEP)



Klaus Töpfer, holding his Keynote Speech.

I am honoured to be here today at this key conference on Freshwater. I am privileged to address this audience from around the world.

We are grateful to the German Government for hosting the conference and welcoming us all in Bonn. It is fitting that we are meeting ON the Rhine, to discuss the issue of freshwater.

Water has always held a central role in the practices and beliefs of many cultures and religions – it is the primary building block of life – the key to sustainable development

The Koran mentions that all life originated from water and that man himself is created of water.

The Incas believed that Lake Titicaca was the centre of the original world – water was the essential factor in the stability and prosperity of the Mayan peoples – it possibly caused their demise – one theory blames the lack of water, followed by flooding, for the collapse of the civilisation.

The so called "water civilisations" of Egypt and Assyria were based on the ownership and control of water – the Egyptians even believed that water was needed for the life after death.

Water's power to destroy is well-recognised – in the Bible floods and drought were punishments sent from God. The Gikuyu tribe of Kenya believe that drought is a sign that the God is angry. They offer sacrifice and prayer to sooth his anger.

Mankind is always at the mercy of water for survival and development

Water pollution, poor sanitation and water shortages kill over 12 million people every year. Millions are in bad health and trapped in poverty – much of their energy and time wasted in the quest for clean water.

Without water there is no hope of sustainable development.

I challenge you today to answer these questions.

- Have the rich, the decision-makers, the large water-users become the "gatekeepers" of the world's water?
- Are you a water gate-keeper?
- Is your demand for water satisfied?
I think it is.
- Do you therefore still see the necessity of finding solutions to satisfy the poor's demand and need for water? – Today the lack of a global and national policies for sustainable management of water resources closes the gate to water – It acts as a barrier to the supply of water for the poor.

As a German I cannot lecture you in the English language, but I would like to remind you that the word "gate", as well as referring to a barrier which can be opened or closed, has also come to mean "scandal".

Are we all players in our very own FRESH WATER-GATE?

A scandal of a very serious nature

We must act!

It would be wonderful if we could (adopt a Harry Potter approach,) wave a magic wand and give the world more water. But we are not wizards – We must take a different approach – an integrated approach which will ensure better use of the available water.

The earth's water supply is static – the Chinese understood this as early as 500 B.C – however the demand for water is growing.

The world's population is increasing by around 77 million people per year. You've all seen the size of the Rhine: The yearly water requirements of 77 million people is roughly equivalent to the flow of the Rhine – that's a lot of water.

Distribution of water in the world is uneven. We have to open the gate to ensure that every citizen of the world has adequate WATER. There is no other option. We have to address a crisis of management and governance rather than a crisis of scarcity.

Hindus believe that in their "sacred waters" distinctions of caste cease to exist – We too should use water to restore equity. We, here in this room are in a position to take action to quickly implement the best solutions to one of THE biggest problems facing the world. Sustainable development is dependant proper management of water resources.

If water is used in an unsustainable way- less is available to meet the needs of people- people who then remain trapped in poverty.

The solutions are known. We need planning, investment and regulation.

The solutions urgently need to be put into practice.

What has been done since Rio? FAR too little.

National governments and international organisations, including (and especially) the UN must act coherently now- Act to save millions of people from certain death and miserable lives.

Integrated water resources management is required to ensure:

- Sustainable demand and use
- Supply to all

Demand

The poor rely on as little as 10 litres per capita per day to survive while the rich use as much as 250 litres – a basic daily water requirement is defined as being 50 litres per person per day.

What can be done to remedy the situation? We cannot take from the rich and give to the poor – The world's policy on water has to change.

One Example:

In Africa the weather can make the difference between life and death. Many Africans still depend on seasonal rains for their freshwater.

Facts

- 88 per cent of water used in Africa is for agriculture – some of which is exported to the developed world in the form of flowers and vegetables
- 40 – 60 per cent of irrigation and municipal water is lost through seepage and evaporation – contributing directly to poverty
- Those with access to this water, suppliers and users are gatekeepers of Africa's water (equity must be restored)

How does this affect the poor (where I live)?

- In Nairobi slums clean water is a constant challenge – Waterways are polluted, sanitation is close to non-existent – The cost of water is very high – 20 times the price of water in the better suburbs.
- In rural Kenya women spend many hours walking to collect water – time which could be dedicated to growing food, education of children or earning a living in another way.
- The struggle to obtain enough water for survival is a drain on human health, finances and energy – it soaks up assets which could be used to build a better life.

Action

- Develop water resources and manage them efficiently – reduce water loss.
- Improve the management of water utilities in developing countries – commercialisation, where profits are ploughed back into the utility, could be useful – e.g. Accra, billing, collection and meter installation have been privatised, which increased efficiency.
- Good governance at national and international level – put in place regulation and institutions which support and can sustain integrated water resources management.
- E.g. laws passed by the Spanish in Mexico as

early as the 1600s – set out rules to ensure that ALL were equally treated in the distribution and use of water – irrigation should not deny water to others.

- Capacity building for improved management of water resources – Transfer of knowledge from developed countries and environmental agencies, such as UNEP – South: south sharing of experiences.
- Raise awareness at every level – put into practice the least-cost (often simple) solutions for sustainable water conservation (e.g. roof rain-water collection, leak location, recycling and reuse).
- E.g. project to rescue ancient Mayan water systems to assist water management in Guatemalan villages

Solutions should be designed for the villages and slums of regions in need

- All planning, management and education should take account of climate change and the unpredictability of weather patterns. Help people and the land to cope with drought as well as excessive heavy rains.

Cost

- Demand for water is of course heavily influenced by cost. In Ancient Rome each Roman was supplied with around 1,000 litres of water per day. In Rome today the average Roman's demand for water is more modest – it is influenced no doubt by cost.
- There is a need to change water demand – pricing could drive the water "gatekeepers" to find new technologies – technology which would lower their water demand.
- Water-pricing should reflect the true cost of the resource. It should take account of the economic social and environmental value of water – encourages more efficient use and discourages waste by the water "gatekeepers".
- Water for the poor should be affordable – they are willing to pay for clean water (income can be used for water infrastructure and management).

Action

- Push for abolition of subsidies for large-scale water users (promotes waste and irresponsibility) (e.g. Kenya breweries in Nairobi consume up to 5 per cent of the total city supply, mainly for washing purposes).
- Subsidies on agriculture encourage increased production – leads to inefficient water use and increased pollution – (examples Africa, EU, N. America) – remove subsidies on agriculture – lower cost of cleaning up the environment e.g. Aral Sea.

- Introduce progressive tariffs (e.g. South Africa).
- Funds available, including aid (re)directed to projects which have taken account of all costs and benefits (promote integrated water resources management) – e.g. irrigation investment might have higher value in another part of the economy – Promote different land-use – Promote the use of least-cost water supply.

As well as satisfying the world's demand for water we must also ensure that the water is CLEAN (polluted water is useless):

- Both the Koran and the Bible mention polluted water as a punishment from God.
- The sanctity of water is important to Zoroastrians – It is laid down that people must not urinate, spit or wash their hands in a river.

In spite of all teachings and knowledge:

- 90 per cent of sewage and 70 per cent of industrial waste in developing countries is dumped untreated into surface waters.
- In industrialised countries pesticides, fertiliser and manure run-off from intensive farms pollute water – industrial waste also contributes to the problem.

Action

- Recognise the scope of the problem (at all levels).
- Develop projects to clean up water and raise awareness, especially of the solutions
- E.g. project for the Prevention of Accumulation and Disposal Measures for Obsolete Stockpiles of Pesticides in Africa.
- Water for African Cities - Lusaka: Environmental impact assessment, community based approach to aquifer management, education and training.
- Yemen: implementation of appropriate wastewater management strategies and National programme of action.
- Apply polluter pays principle.

Supply

- Water has to be brought to those who need it (distribution should not stop at the "gates" of affluent suburbs or prosperous large commercial farms).
- Human energy should not be wasted walking hours to the nearest water supply (6 -8 hours per family per day) – Women could spend this time on more important matters.

Action

- Investment in supply infrastructure (least cost most effective technology, UNEP studies available).

E.g. – The amount of water the world's reservoirs can store is falling by one percent a year – Mud, silt and soil is building up in these structures – I can assure you that the UN's Dams unit will work to find a solution to this problem

- Involve communities in the delivery decision-making
- education in the better management of available water (especially women)
- Remember solutions are not always complex and costly

E.g. ≤the Hippo Roller, a plastic barrel with a handle, which can be filed with water and pushed along like a wheel barrow. Women using it in South Africa can roll four times as much water as they used to carry on their head.

Conclusion

- Integrated concrete action will ensure.
- Sustainable demand and use.
- Supply to even the poorest slums.
- We, the gatekeepers, have the power to open the gate – the power to take action – the power to put in place the policies which will release the water to those in need.
- Instead of FRESH WATERGATE let us ensure that we will pass through the gate of horn, the gate of Greek legend from which true dreams come, our dream will be clean, affordable water for all.

Action now

- Avoid 66 per cent of the world's population living in water – stressed conditions by 2025.
- Ensure sustainable development and poverty reduction.
- "Water is a very good servant, but it is a cruel master." C.G.D. Roberts , Water should serve all mankind and assist the future prosperity of the entire world.
- I am convinced that this conference can develop practical solid guidelines for implementation of solutions. Solutions which can form a key component of WSSD.
- If we all make a commitment to act, then together we can save lives in the future. We can give the poor a chance to live a better life – a life free from the slavery of water and poverty.

KEYNOTE ADDRESS BY MARIA MUTAGAMBA

Minister of State, Ministry of Water, Land and Environment, Uganda

I am happy to be here with you on this occasion of the International Freshwater Conference aimed at providing an input to the World Summit on Sustainable Development to be held in Johannesburg, South Africa in September 2002.

This will act as a 10 year follow-up review of what has been achieved since the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992.

Water is Life. However, in some parts of the world there is widespread scarcity, gradual destruction and increased pollution of our water resources mainly through poor sanitation, industrial and municipal waste, and deforestation and poor agricultural practises. All these things threaten the environment and the water needed to sustain life.

Water is a key natural resource that is essential in the overall socio-economic development of every country, and our presence here highlights the importance of water issues in the international arena and our commitment to address those issues. It is a clear recognition that a strong, cohesive international position is vital to achieve the urgent improvements in water outcomes, needed to advance the socio-economic development of humanity.

As it has been pointed out, our excellent starting point in the terms of the necessary actions and desired outcomes in the water sector is Chapter 18 of the Agenda 21. This chapter focuses on the freshwater resources, outlining specific actions and strategies to achieve the sustainable management and the use of freshwater resources. It is a comprehensive blueprint of actions for governments to undertake in the 21st century, thereby providing countries with a unique opportunity to ensure that water management policies help achieve the sustainable water use, as a vital component of sustainable development.

The general objective of the Chapter 18 are to:

- ensure that the adequate supplies of clean, safe water are for the entire population of the planet.
- preserve the hydrological, biological and chemical functions of the ecological systems.
- adapt human activities within the capacity limits of nature, and combat vectors of water-related diseases.

It also identifies actions needed to address the

world's water problem. Yet the evidence is clear that the objective of Agenda 21 have not been fully realised.

While strategies have been drawn, policies formulated and constraints identified, at various forums on water, a lot still remains to be put on management and co-ordination.

International and intersectoral approaches, that recognise interlinkages between nations, and between sectors say land and water, agriculture and water, technology and water, health and water, gender and water, which all affect water management are still to be consolidated further.

No single mechanism or fragmented approach will be enough. Policy packages using a mutually reinforcing matrix of institutional and policy reform; legal and economic management instruments will be needed.

In Uganda, only 52 per cent of the rural population and 54 per cent in urban population have access to safe water. Our goal in the water and sanitation sector is to achieve 100 per cent coverage in rural and urban areas by 2015. We have set our targets high in order to determine the pace. Our driving principle is "some for all and not more for some". However, the sector is bound with issues of inadequate co-ordination among other sector actors, inadequate budget support to achieve our coverage goals, low planning and implementation capacities especially at local community levels and low level participation of the private sector. As such we still suffer high incidences of water borne diseases.

Gender and Water

In Uganda, like other developing countries, women are largely responsible for water collection and sanitation at the household level. Gender responsiveness in policy objectives has been emphasised over the past 10 years in various sectoral programmes. The Water Statute of 1996 has a guiding principal: "To recognise the role of women in the provision, management and maintenance of water."

Some of the interventions to address gender issues include:

- Ensuring gender balanced representation in management committees at community level.
- Collection of data disaggregated by sex and use of participatory methods, which generate gender-relevant information from the recipient community.



Maria Mutagamba, Keynote speaker at the Opening Session.

- Practical experience reveals that women are easier to mobilise than men and can be relied on for collective action.

Since the United Nations Conference on Environment and Development (UNCED) of Rio de Janeiro in 1992, countries have gone a long way in developing policy, legal and institutional frameworks in the water sector geared towards specific actions and strategies to achieve the sustainable management and use of freshwater resources drawing the mandate from chapter 18 of Agenda 21. This chapter is a comprehensive blueprint of actions for governments to undertake in the 21st century. The general objective is a need to shift from setting legal frameworks to compliance and enforcement.

Balanced water uses between different demands and across boundaries is a key factor in the production of adequate food for the whole world. Water resources is a prime factor in irrigation, livestock watering, aquaculture, fisheries, food processing, and other agro-industry, and fishing industry, which provides opportunities for employment to a large portion of the Ugandan rural and urban populations. The provision of water for domestic water supply and agriculture to the poorer segments of society in partnership with all stakeholders, including the private sector, is a development imperative, both for reasons of social equity as well as food security and economic efficiency. Only governments can set the framework for development of water services and balancing of water uses. Considering the urgency to alleviate livestock water shortage in the dry cattle corridor, provision of water for livestock is the major ongoing activity in my country. Under this programme, emphasis is currently focused on the most needy areas.

The primary concern with regard to water and the environment in Uganda relate to the protection and conservation of water bodies. Of interest are the sensitive and scenic rivers and wetlands. This includes aspects of public health from water resources changes induced by water resources development and human activities. Environmental screening processes should ensure that environment is provided for as a legitimate water user.

With regard to the transboundary water resources, Uganda shares the Nile with nine countries, namely: Burundi, Democratic Republic of Congo (DRC), Egypt, Sudan, Eritrea, Ethiopia, Tanzania, Kenya, Rwanda, and Uganda. The countries of the Nile serve as a home for an estimated 300 million people with considerable challenges for poverty, instability, rapid population growth and environmental degradation. The ten countries have recognised that the Nile holds significant opportunities for co-operative management and development bringing mutual benefits to the region. The Nile holds significant oppor-

tunities for win-win development that could enhance food production, energy availability, transportation, and industrial development, environmental conservation and other related development activities in the region. The countries have gone ahead to establish the Nile Basin Initiative (NBI) that provides an agreed basin-wide framework to fight poverty and promote socio-economic development in the region. Co-operative water resources management can also serve as a catalyst for greater regional integration, both economic and political, with potential benefits possibly far exceeding those derived from the river itself.

The Initiative is based on the recognition that the Basin has a shared past and a shared future, and that there is an urgent need for development and for the alleviation of poverty. It represents a deep commitment by the riparian countries to foster co-operation and pursue jointly the sustainable development and management of the Nile water resources for the benefit of all. The NBI process marks the first time that all riparians have joined together in a joint dialogue and a co-operative initiative as equal members. The inclusion of all ten Nile riparians holds the promise of meaningful, comprehensive co-operation in the Basin. Throughout the NBI process high priority has been and will continue to be placed on strengthening the process of consultation in order to build confidence and trust.

In order to translate the shared vision into action, the riparians are developing a strategic program that focuses on two complimentary ideas of a shared vision and action on the ground. These ideas are mutually reinforcing. A common vision provides a framework for activities on the ground and in turn these activities realise the vision. The ideas are being translated into action through a basin-wide Shared Vision Program to create an enabling environment for co-operative action through building trust and skill and a Subsidiary Action Program to plan and implement investments and activities on the ground, at the lowest appropriate level taking into account the benefits and impacts of these activities in all riparian countries.

Floods and droughts have been common events throughout the world and beyond all doubt these natural hazards affect human living conditions and sustainable socio-economic development. To reduce the catastrophic destruction brought about by floods and droughts concerted efforts are necessary. Floods and droughts are two extreme events in water resource management. People live along rivers and lakes, mostly women and children. Large river flood plains usually attract high-density population and economic growth flourishes, however, incorrect use of the flood plains by diverting waterways, reclaiming lakes and other land erosion activities lead to

changes in river configuration and reduction in water storage facilities and floodways. As a result flood disasters increase.

Flooding is a natural phenomenon. Knowledge and experience of flood prevention have been accumulated over the years. Structural and non-structural measures such as dikes and dam construction, river dredging, flood warning systems and integrated flood management both during and after flooding have an important role to play in reducing flood disasters.

Drought is also a natural phenomenon and is just the opposite of flooding. Rainfall is scarce; shortage of available water resources leads to insufficient water supply. Drought intensifies water shortage. It is urgent therefore to reduce achieving the goal. In areas where droughts are frequent, it is essential to establish long and short-term water resources management planning and to improve long-term hydro-meteorological forecasting and so mitigate drought disasters.

In Uganda efforts are underway to construct small dams and valley tanks to harvest and store flood waters for use during the dry spells. However, in case of calamities due to floods and droughts, there is a Ministry of Disaster Preparedness hence giving it high political commitment to abate any disaster. This is a capital intensive venture that requires mobilisation of substantial financial resources to make a meaningful impact. Again, technological capacity is not yet developed and such big projects revealed a high degree of corruption.

Uganda has gone a long way in trying to combat corruption of decentralised services, creation of an office of Inspector General of Government to monitor the provision of services, a Ministry in charge of Ethics and Integrity and a Public Accounts Committee of Parliament to curb corruption. Hence there is need for good political support to curb corruption.

I wish you a fruitful deliberation and I thank you.

III.2 Ministerial Session

KEYNOTE SPEECH BY KAMAROU FASSASSI

Minister of Mining, Energy and Water Resources, Benin

Je voudrais tout d'abord remercier le Gouvernement allemand pour l'invitation faite au Bénin pour participer à cette importante rencontre dont le thème central est:

"L'Eau, clé du développement durable"

Depuis plus d'une décennie, la communauté Internationale engrange jour après jour des succès dans les réflexions qu'elle mène sur l'Eau comme source de vie et facteur de développement. Je m'en voudrais de ne pas souligner l'importance de la présente rencontre qui fait le point des différentes initiatives conduites depuis lors. L'événement qui nous réunit ici est capital car il s'agit de l'Eau, denrée indispensable à la vie et au maintien des écosystèmes et de l'environnement et pour laquelle on ne connaît pas encore de substitut.

Comme vous le savez, l'intitulé de cette session qui est «Utilisation équitable et durable de l'eau»

montre la complexité d'une gestion pérenne de l'eau dans un monde où tous les besoins sont croissants et presque également prioritaires.

Cette vision des choses s'impose à tous les pays en général mais elle est encore plus évidente pour ce qui concerne les pays en développement tels que le mien; le Bénin. Le Bénin dispose d'un important potentiel hydrique globalement satisfaisant mais inégalement réparti sur le territoire national et soumis à diverses formes de menaces permanentes. Il ne se pose donc pas au niveau de mon pays un problème de déficit en eau mais plutôt le problème de moyens en vue de la mobilisation de cette ressource vitale.

Il n'est pas surprenant de constater que le Bénin continue de pratiquer une agriculture de type pluvial et d'importer la quasi-totalité de ses besoins en énergie électrique. Le Gouvernement du Bénin préoccupé par cette situation multiplie

les efforts pour rechercher les solutions d'une bonne gestion des ressources en eau qui garantissent le développement durable.

Pour ce qui concerne l'Alimentation en Eau Potable en milieu rural, au regard des enseignements tirés de la première décennie internationale de l'eau potable et de l'Assainissement (DIEPA) de 1980 à 1990, une stratégie basée sur la réalisation des ouvrages à la demande des communautés a été élaborée et adoptée en 1992. Avec cette approche associée intimement les communautés à toutes les étapes du processus à savoir le choix du type d'ouvrage, la participation financière à l'investissement, la gestion de l'ouvrage. La nouvelle stratégie mise en œuvre à travers le Programme d'Assistance au Développement du secteur de l'Alimentation en Eau Potable et de l'Assainissement en milieu Rural (PADEAR) se base essentiellement sur les principes fondamentaux que sont:

- La décentralisation du processus de prise de décision
- Une responsabilisation plus accrue des communautés locales
- L'amélioration de l'environnement sanitaire en milieu rural par le développement de l'éducation sanitaire
- Le renforcement des capacités locales pour une exploitation durable des équipements

Sous cette réforme, l'Alimentation en Eau Potable en milieu rural a connu un important développement depuis 1994 avec des dispositions qui permettent d'espérer une durabilité dans la fourniture des services. Ainsi, pour toucher les populations des zones rurales éloignées et à habitats dispersés, la norme initiale de un point d'eau pour 500 habitants est ramenée à un point d'eau pour 250 habitants. Mieux, il est possible aujourd'hui de satisfaire en point d'eau, une communauté de 50 à 100 habitants pourvu qu'elle ait la capacité d'en assurer l'entretien. Le Programme d'Action du Gouvernement s'est fixé comme objectifs de porter le taux de desserte actuel de 60 per cent à 90 per cent en 2006 et de ramener pour la même période à 10 per cent le taux de panne qui est actuellement de 23 per cent.

Mais le défi majeur des années à venir est d'assurer le fonctionnement et le renouvellement des ouvrages à travers une gestion communautaire pérenne. A ce défi, s'ajoute le nouveau contexte institutionnel que constitue la décentralisation qui confère aux communes les prérogatives de l'alimentation des collectivités locales en eau potable.

Dans cette perspective, un réajustement de la stratégie sectorielle s'impose et un travail est déjà amorcé dans ce sens. Dans le domaine de l'hydraulique urbaine, la réflexion pour une action plus dynamique surtout en faveur des couches les plus démunies des villes a débouché sur la décision de séparer l'eau de l'énergie électrique. Cette démarche vise à mettre en œuvre une politique globale et cohérente pour l'alimentation en eau potable au Bénin.

Pour pérenniser ces importants acquis, le Bénin s'est engagé depuis 1996 dans une démarche de gestion intégrée des ressources en eau (GIRE). C'est de cette façon à notre avis qu'un développement véritablement durable pourra être amorcé. Ce choix s'est confirmé en janvier 2001 lors du premier forum national de l'eau où toutes les couches socioprofessionnelles se sont concertées autour des problèmes de l'eau pour réaffirmer le caractère incontournable de la gestion intégrée des ressources en eau.

Et pour faire effectivement de l'eau l'Affaire de Tous et garantir son utilisation équitable et durable dans le sens de la lutte contre la pauvreté, le Bénin a mis en place, avec l'appui du Partenariat Mondial de l'Eau (GWP), son Partenariat National de l'Eau (PNE) dont l'assemblée constitutive s'est tenue en septembre 2001. Ces différentes approches qui prennent en compte tous les quatre principes directeurs énoncés à Dublin ainsi que les recommandations de La Haye permettront d'aboutir à une gestion concertée des ressources en eau au Bénin.

La mise en œuvre de cette nouvelle démarche qu'est la gestion intégrée des ressources en eau au Bénin exige un minimum de moyens, notamment le développement des capacités et la disponibilité de financement. Nous souhaitons vivement que s'établisse et se renforce une coopération régionale et internationale afin que l'eau puisse contribuer efficacement au développement durable de chacun de nos pays, en particulier les pays en développement touchés par la désertification et les effets de la sécheresse.

Permettez-moi de saisir cette occasion pour saluer et remercier une fois de plus la communauté internationale pour le soutien inestimable qu'elle nous apporte. Pour terminer, je voudrais vous dire, Monsieur le Président, que le Bénin reste engagé dans toutes les initiatives qui seront prises ici et qui permettront de conduire aux rencontres de Johannesburg et de Kyoto.

Vive l'eau, clé du développement durable.
Vive la Coopération internationale.
Je vous remercie.

KEYNOTE SPEECH BY MAHMOUD ABU-ZEID

Minister of Water Resources and Irrigation, Egypt

It gives me great pleasure to be with you here today in such magnificent venue and with this distinguished gathering. Let me start by thanking our host for the excellent arrangements and warm hospitality and for inviting me to speak to the Conference.

From the outset of this Conference we have been remind time and time over of the various dimensions and impact of the water crises. We have heard many of the concerns voiced by our distinguished panel at the opening session, by participants of the stakeholders views session, in private and public discussion.

I have been to Mardelplata, Dublin, Rio, and Paris, I attended the First and Second World Water Forum as President of the World Water Council, it is very evident to me now that the call for action is getting clear and louder than ever.

Yesterday we have listened to excellent introductions to water and sustainable development covering the broader dimension of issues.

We, as ministers, must show the leadership and demonstrate the resolve to change and courage, to make the hard choices.

The Time for Action Now

The World has had enough discussion over the last quarter of a Century. We have to establish clear priorities. Those priorities should put people first and foremost on our consideration, because water is life. We have the responsibility to protect and safeguard human life. We must not forget the environment base that nourishes and supports our lives.

Focus has to be broadened from exclusively blue water flow to incorporate also green water issues, from water quantity to incorporate also water quality, and from droughts to incorporate also floods.

The Road Map to Action

We as decision-makers, are at the critical juncture in history. We must take the lead and make the right choices from among the many competing interests and crowded agenda. There is no magic solution or silver bullet, and we cannot afford to procrastinate or to be facile, being every thing for every one. My fundamental proposal for action is three strategic considerations and six priority action programs outlined as follows:

Three Key Strategies

1. The Poor and the Needy come first.

As you all know by now, one out of three people on this planet today is living on less than two US-dollars per day. Half of them are in a state of

abject poverty, living on less than one US-dollars per day. Among these poor people, about 800 million go to sleep hungry every night. Economic poverty and water poverty are synonymous, and they are the evils of all times. The inequity of economic resources, including water is not only a threat to sustainable development but is also a destabilizing force in world peace and security because it is a basic human entitlement.

2. Integrated Water Resources Management

There is a need to promote and apply the concept of integrated water resource management that speaks to the issue of equity and efficiency in water use and consumption. The river basins are an effective, the hydrologic unit that provide surface and groundwater, and would ideally conform to the concept and criteria of integrated water resources management. The economic efficiency, equity and ecosystem stewardship and management can be only addressed adequately when we apply this concept.

3. Water Storage

We all are aware of climatic changes issues receiving much attention and debate. We know too well that water is subject to the cyclic events of flood and draught. Human needs and that of most ecosystems require steady supply of water for its sustainability. Storage of water to deal with the vagaries of the weather has been as old as the Biblical time, and along before that, many old civilizations of Egypt and China realized that also. Water storage is crucial to sustainability. Dams, barrages, reservoirs, canals and hydraulic structures of all types and sizes are essential tools, known to the human being, to manage the fresh water storage and its timely distribution and use. We need to improve them and make them more efficient, cheaper and safer, manage their side effects and learn how to harness them to serve the humanity needs and adapt them continuously to respond to societal norms of socio-economic and environmental sustainability.

The Priority Actions

Among many of items on the crowded agenda for action, we might place emphasis on these five priority programs which I consider to be consistent with our approach to meet the needs of the poor and the needy especially those in the developing countries:

1. The need to promote, propagate and make available low cost technologies for water storage, conveyance, distribution, treatment and use for agriculture, drinking and industrial application that can be adapted by communities and households of the rural and peri-urban poor.

2. Increasing aid effectiveness to address access to water for food security, drinking water and sanitation cannot be understated. ODA funding must be increased, targeted and clearly accounted for in meeting the objective of averting of water looming crises.
3. Maximize benefits of irrigated agriculture.
4. For many developing countries increasing agricultural productivity is a key to poverty reduction. The World Food Summit in 1996 estimated that 60 per cent of the extra food required to sustain the world in the future must come from irrigated agriculture. Much of this increase must come from improvements in existing schemes, as new sites for development are scarce. Three-quarters of the total irrigated area of 260 million hectares are in developing countries, where small holder agriculture still predominates.
5. To increase benefits of irrigated agriculture to the poor, it is critical to understand the real social and economic benefits of irrigation development, the water environment where poor people live, their production preferences and what designs can allow poor people and small holders to make the most of their opportunities. Irrigated agriculture has been a strategy for poverty reduction and there is evidence that this strategy can be successful.
6. On the other hand, just a 10 per cent improvement in efficiency of water delivery for irrigation systems could conserve enough water to double the global amount available for drinking. However, what appears to be solid and sensible recommendation for any one country may appear just the opposite when applies to many. It seems dangerous to presume; as many economists and officials do that there will be enough exportable grain to meet the import needs of all these countries at a price they can afford.
7. The promotion of good practice, capacity building and training of cadre to develop an indigenous knowledge base in many developing countries is essential to ensuring access of water to everyone. The appropriate technology is a pre-requisite to avoidance of costly solutions and ensure the durability of the infrastructure in meeting the local requirements.
8. We need to unlock the gridlock on information on additional water resources, especially fossil groundwater, the use of non-conventional water, and brackish and saline waters where

feasible or possible. Universal access of developing countries to information should be instituted on geological water gathered by the oil exploration firms and hydrological discoveries made by satellite and remote sensing technologies.

9. No one can live without water. At the same time it is recognized that there is much inequity and inequality among users, sectors and inadequate access to clean water and sanitation services. This results in tensions over shared water resources add fuel causes to conflicts. It is essential that policies, strategies, institutional and legal frameworks be developed, coordinated and harmonized at global levels, to deal with the promotion of peace and security of transboundary water and water sharing between regions and countries and provide safeguards for dispute prevention and create effective disputes settlement mechanisms. Experience gained from successful cases are to be promoted and made known to many parts of the world, so that a common and better understating of the issues can expedite solutions. Our experience in the Nile Basin has yielded many good examples in this direction.

The pace of scientific progress in the present world is staggering – new technological, scientific and engineering advances are revolutionizing health care, communications, water supply and agriculture, even as we speak here today. This progress helps to ensure that our precious freshwater resources are used in the best interest of society, and helps to work toward the alleviation of poverty. This is also recognition that scientists, technicians, and engineers do not operate in a vacuum, but have ethical as well as social responsibilities that cannot be ignored. We the people, who will effect change, have an obligation to make certain that these responsibilities are honored. We need to put all our political skills, all our technical and scientific knowledge into making sure that there will be no conflict over water, either now, or in the future. We need to rise above the rigid parameters of our respective disciplines to ensure that there will be sufficient water, for all people, for all time to come. Last Century has seen the greatest advance in science and technology in all of human recorded history. The challenge for all countries in the 21st Century is how to rationalize new technology with humanistic and social needs, and the subject of freshwater is among the most compelling of these needs.

Thank you.

KEYNOTE SPEECH BY ARJUN CHARAN SETHI

Minister of Water Resources, India

At the outset, I would like to congratulate the Government of the Federal Republic of Germany to have successfully and ably organized this International Conference which is intended to be a preparatory step for the upcoming world summit on sustainable Development to be held in Johannesburg in 2002. Also, I most heartily thank the Government of Federal Republic of Germany for their very warm hospitality extended to us during the Conference.

It is hard to believe that this earth in which water seems to be the dominant element should ever face shortage of water. The use of water in the world has increased by more than 35 times over the past three centuries. Globally 3,240 cubic km. of fresh water are withdrawn and used annually. Of this 69 per cent is used for agriculture, 23 per cent for industry and 8 per cent for domestic use. Water use pattern varies considerably around the world. Water supply per head is a broad indicator of water availability, drops as the population grows. It is clear that water is going to become one of the most sought-after resources in this century. Managing the water cycle for the benefit of mankind and the environment is one of today's greatest challenges. One of the clear signals of water scarcity is the increasing number of countries in which the population has surpassed the level that can be sustained comfortably by the available water. The reality is that there is essentially no more water on the planet earth today than there was 2000 years ago when the earth's human population was less than 3 per cent its present magnitude of 6.10 billion.

Equitable access to water resources by all segments of the society can be achieved by way of augmentation of the resources and development of appropriate infrastructure for distribution together with stakeholders participation in all aspects of water resources development and management. This can be achieved by taking up construction of water harvesting structures, developing storages, ground water recharge and development, conservation of water and avoiding misuse through public awareness by education, regulation, incentives and disincentives.

There is thus a need for holistic and integrated Water Resources Development and Management for sustainable and optimal economic development. Integrated Water Management based on a multi-sectoral approach to water management that seeks to optimise the use of all sources of water to supply the multi-interest utilisation of the resource for domestic uses and sanitation, agriculture, industry, urban development, hydropower generation, inland fisheries, transportation, reac-

tion etc. needs to be advocated. Integration of Water Management effort with the management of other natural resources such as land and forests within the framework of national economic policy also needs to be stressed. Integrated Water Management should be carried out at the catchment or sub-basin level and would involve optimal water allocation for competing uses; promotion of efficiency in uses; integration of environmental and resource quality consideration; and flood and drought management.

In India we have tried to follow this model. The Indian National Water Policy formulated in 1987 states:

"There should be an integrated and multi-disciplinary approach to the planning, formulation, clearance and implementation of projects including catchment area treatment and management, environmental and ecological aspects, rehabilitation of irrigation affected people and Command Area Development."

The Indian Constitution enjoins upon the State to protect and improve environment and to safeguard the forests and wildlife of the country. It stipulates that it shall be the fundamental duty of every citizen to protect and improve the natural environment including forests, rivers and wildlife and to have compassion for living creatures. In keeping with the spirit of the Constitution, laws have been enacted for prevention and control of water pollution, air pollution, conservation of forests and protection of the environment. The Government assumes the prime responsibility for water resources management and strives the participation of all stake holders specially that of women in protection of water sources, irrigation and water shed management, rain-water harvesting, forestry, etc.

For invoking stakeholders participation, beneficiaries for different uses of water should be effectively involved in the decision making process for the development and distribution of water. Appropriate institutional framework for ensuring beneficiary participation will have to be put in place through State Legislation. In India the local level public institutions have been created to empower the stakeholders for planning and implementing programmes like drinking water supply, sanitation, rural development etc. Similarly, efforts are being made to involve farmers progressively in various aspects of management of irrigation systems, particularly in water distribution, collection of water rates and operation and maintenance. Assistance of voluntary agencies is also being sought in educating the farmers in efficient water use and management.

The water allocation priorities have to be decided in accordance with area specific considerations. However, drinking water requirements for human and livestock consumption would always get the first priority. The Indian National water Policy 1987 prioritises the various uses of water as follows:

- Drinking water
- Irrigation
- Hydropower
- Navigation and other uses
- Agro-industries and non agro-industries

Water resources development projects should as far as be planned and developed as multi-purpose projects. Provision for drinking water should be a primary consideration.

Industrial effluents, municipal sewage and rural and urban waste need to be treated before being discharged in the natural streams. Minimum flow needs to be ensured in the perennial streams for maintaining ecology and social considerations. The principle of polluter pays needs to be followed in the management of polluted water. Appropriate laws need to be enacted for protecting water resources from pollution and overuse.

Monitoring the water quality of rivers and other water bodies is most essential in regulating its quality. In India, Central Pollution Control Board has a nationwide responsibility of water quality monitoring and management. The State Pollution Control Boards take care of pollution issues at state levels. Ground water quality is also being monitored both at Central and State levels by the Central Ground Water Board and state agencies. Recently, a Water Quality Assessment Authority has been set up at the national level to issue directions and for taking measures for water quality monitoring, treatment of waste water, promoting recycling and reuse of treated sewage for irrigation, drawing action plans for quality improvement in water bodies, impose restrictions in water abstractions etc. A number of programmes have been initiated to restore water

quality and sustain rivers, lakes and wet lands. Some of these are Ganga Action Plan and National River Conservation Plan covering all rivers of India.

Mutual co-operation and exchange of technology among the countries of the region and mutual confidence building at all levels is essential for deriving maximum benefits from trans-boundary waters. Honouring riparian rights and evolving sharing formula on the principle of equitable distribution of distress should be the guiding principle. Indian experience in dealing with trans-boundary issues can be summarized as the one where bilateral co-operation is recognized as a tool for integrated development of trans-boundary water resources. The largest part of Indian water resources is contributed by trans-boundary rivers which rise from or flow into or through six of its neighbouring countries viz; Nepal, Bhutan, Tibet/China, Myanmar, Bangladesh and Pakistan. Bilateral co-operation with these countries is based on good neighbourliness, optimum utilization with mutual concern and integrated development.

For the last few decades, developmental planning in the water sector has sought to address the central issues raised in Agenda-21 "Improving access and addressing resource degradation". Over the period as the pressures on the resource have grown, other issues- enhancing efficiency in provision and use of services through the promotion of appropriate practices and technologies, involving local communities and the private sector and following an integrated water management approach have become increasingly important considerations. These efforts would need to be redoubled in partnership with the international community to realize the global vision of efficient resources management and universal access envisaged at the Earth Summit.

I am sure this conference will be able to come out with appropriate recommendations for solving the looming global water crises and ensure sustainable development and management of this precious resource.

Thank you for your attention.

KEYNOTE SPEECH BY MICHAEL MEACHER

Minister for Environment, United Kingdom

I would like to thank most warmly our German hosts for laying on this conference. I would agree that freshwater and sanitation is one of the most important sectoral issues facing us for the Johannesburg summit, and this conference offers the support to lay the foundations for a genuinely radical commitment for the next decade.

Let us begin with the facts. It is a scandal that should shame every one of us in humanity at the start of the 21st century that 2 million children die each year needlessly of water related diseases – 6,000 every day. It is scarcely less of an indictment that 1 in 6 of the whole population of the world still lives without access to safe drinking water and almost 1 in 2 without adequate sanitation.

That is not to deny that there has been progress – this is not an insoluble problem. Tremendous efforts have been made in the last 20 years to tackle this problem and with some success. As a result of the international drinking water and sanitation decade up to 1990 and policies since, the number of people with access to clean water has more than doubled. Yet still the latest figures from WHO and UNICEF show that at least as regards sanitation, partly because of sharply rising populations, Africa and South Asia have not improved, indeed in some areas are going backwards.

So what is needed to deal with this, still in some respects deteriorating situation? I submit 3 things – political will, action plans and of course programmes to deliver political aspirations and adequate funding. The conference text for Johannesburg will come, not from the political rhetoric of the declaration – that is relatively easy – but from the specificity and detail of the action programmes spelt out to deliver the rhetoric, and the clarity of the funding mechanisms that will underpin these programmes.

I am concentrating today on the 3rd of these targets – finance. The current position is stark. Estimates for required investment in infrastructure are in the order of \$180 billion annually. Compare that with current investment levels which are estimated at \$70-80 billion annually. That is a huge gap – how do we meet it?

A recent report by Ernesto Zedillo, the former president of Mexico, with the help of many including Robert Rubins, the former US Treasury secretary, concluded that if we are to achieve the 2015 Millennium development goals of halving absolute levels of poverty, there will be required each up until 2015 an extra \$50 billion a year – roughly a doubling of current levels of debt assistance.

That may seem Utopian. But the UK Treasury Minister, Gordon Brown, in a recent speech in New York has insisted strongly that it is not. He argued that reordering priorities, untying aid, pooling funds internationally, enhanced debt relief, and better focussing of debt aid could release additional funds for anti poverty programmes in the poorest countries. But to reach \$50 billion a year more each year until 2015 will require more. I quote his words: "One of a number of possible ways is for national governments to pre-commit debt resources – for say, 30 years or more – with national governments offering a guarantee, either through callable capital or other means as security, it is possible to lever up these countries to reach our targets."

And in case anybody thinks the UK is not putting its money where its mouth is, let me assure that in Britain, since 1997 when the present Government came into office, we have increased the aid budget to \$5.2 billion, a five per cent real terms increase by 2004. We have for the first time in two decades, increases the percentage of GDP devoted to debt aid and we are committed to making substantial additional progress.

But public sector aid, even if it can be levered up so substantially, can never be the whole answer. FDI at \$150 billion a year is already three times the level of ODA and will increasingly become the main engine of economies' debt. What is needed is a partnership between them which combines their complementary roles, with debt aid providing the basic health, education and transport services and support for good governance and a stable economy which can then lay the foundations to attract private investment.

Private sector finance will certainly be important but it will generally not be used for basic services. Thus the World Bank's database on Private Participation in infrastructure, whilst it shows that private investment in water and sanitation in developing countries to date totals \$25 billion, also reveals that none is in South Asia, and almost none is in Africa. Yet these are the two regions in the world without adequate water and sanitation services. This indicates that private sector investment is at present insignificant at providing basic water and sanitation services to the very people who most need it.

But there is, as we say in the UK, a third way. As vision 21 has demonstrated, the most important change needed is the shift in emphasis to local efforts, local initiatives, and local leadership. The Grameen Bank in Bangladesh is a well-known example of successful credit provision for the poor, especially rural women's groups. But there

are many others. I quote from the excellent paper presented to this conference entitled "Improving Access to Affordable Water and Sanitation". And there are other significant opportunities.

I end with one last example, Gujerat, which I owe to Sir Richard Jolly and the excellent Water Supply and Sanitation Collaborative Council. A miniscule sum in seed finance was used to bring together NGOs and community based organisations to develop a vision of how water, sanitation and hygiene services in their state should be in 25 year's time. The outcome was a practical action plan, including hygiene education in every school within 10 years, together with separate boys' and

girls' lavatories in every school in the state – goals which should have a major impact on the health and hygiene of millions, at a fraction of the cost of previous investment in water and sanitation.

That is an example to us all and we need to see it replicated widely. Affordable water and sanitation services and the means of personal hygiene are fundamental human rights and a confirmation of significantly raised targets for development aid, a monitoring of private sector investment and above all local innovation and local empowerment could, I believe, provide the means to deliver them.

KEYNOTE SPEECH BY RONNIE KASRILS

Minister of Water Affairs and Forestry, Republic of South Africa

I welcome this opportunity to address you on the vital issue of finance for water as a prelude to the Johannesburg Earth Summit at which we hope to see real progress on a range of issues which are critical for sustainable global development

The terrible events of 11th September have strengthened my government's belief that the focus of our efforts at the Earth Summit must on ways to address poverty since this, and the related phenomenon of inequality, pose the greatest threat to social and political sustainability. We know that without solid political and social foundations we will not achieve the economic and ecological sustainability we all seek.

It is not coincidental that many of the larger environmental problems we face are in countries with weak, ineffective or corrupt governments; neither is it coincidental that there is a clear correlation between good governance, social and economic development and environmental conservation. The recent tragic events of September 11th emphasise the urgency of addressing the needs of the poor in all sectors to end the marginalisation of the excluded – for all our sakes.

It is in this context that I would like to highlight the need for special attention to be given to the financial dimension of our challenge in the water sector. I say this as a relative newcomer to this field based on my own experience, starting with the shock of finding, in a village with a text book community water project, a young woman with her baby on her back, digging for water in a river bed, metres from the safe supply that we had provided. She was doing this because she had to choose between buying food or buying water.

I decided then and there that if this was the con-

sequence of applying sound financial principles developed in august meetings such as this one, I could not be part of them. And I believe that the way we have developed the financial structure of our water sector since then, particularly the adoption of a policy whereby we aim as a national government to ensure that all South Africans can access a free basic supply of safe water, has gone some way to charting a way forward.

Our South African experience and the approaches we are taking will be covered in more detail by my Director General in the working group on finance on Wednesday. What I would like to do today is to outline what needs to be done.

I will cover a number of areas starting with the immediate challenge of water services, the trilogy of water supply, sanitation and soap, about the challenge of maintaining those services once they are provided. I will also address some dimensions of the management of water resources. And because we cannot view our sector in isolation, particularly not in the context of the Earth Summit, I want to identify and highlight certain key linkages to the broader issues of development finance, trade and environmental regulation.

In the area of water services, there are four key sources of finance:

- Government budgets;
- Community contributions through tariffs or other forms of cost recovery;
- Private investment; and
- External financial assistance (grants and loans).

We cannot address the global water challenge without mobilising all these sources and using them to best effect. To do this, we must start by recognising the central role of government in not just in financing service provision but also in establishing frameworks and at different levels, actually operating services.

The private sector does have a role to play. Opponents such as organised labour would be more easily convinced of this if we all recognised the continued centrality of government's role and if private interventions demonstrably addressed the needs of the poor as well as the potential profits from the rich.

Social consensus is also essential if we are to achieve the potential of community contributions through tariffs and less direct methods. In South Africa, we have learnt that providing free basic water is one of the best ways of separating the really poor can't pay from the "free rider" won't pay.

And finally, until we create the conditions in which developing countries can fund their service needs as we can in South Africa, we must recognise the responsibility – and I use the word advisedly – of the rich world to contribute through overseas development assistance to meeting the needs of the developing countries.

So my Government endorses the call for governments to increase their allocations to this sector, for the private sector to be challenged to address the needs of the poor as well as of the better off and for an increase in ODA to incentivise these processes. We also believe that much more careful attention must be given to ensuring that the very poor have access to basic services than has been done to date.

Since we are here not just to talk about water services but also to promote sound water resource management, there are some other issues which should be addressed. It is generally recognised that water resource management to ensure the availability of a reliable quantity and quality of water is a public responsibility. We believe that users should contribute to the costs, especially as water sources are more intensively utilised and managed.

We are pleased to see the recognition in the draft statement that LDCs still need to develop water resources in support of water services and economic development. The corollary of this is that they must receive the necessary support

from multilateral financial institutions which should not allow themselves to be bullied out of business by a handful of activists.

A gap in our current approach is the financing of measures to address drought and flood disasters. While investment in information systems is important if we are to manage and mitigate disasters, there is inadequate recognition of the fact that climate change is likely to aggravate these disasters. We should recognise that in terms of the "polluter pays" principle, the costs of adaptation to climate change ought to be carried, at least in part, by those who have been the major contributors to climate change.

Finally, while we support the need for greater investment in promoting common approaches to the management of water in shared rivers, which should be seen as an investment in co-operation rather than in conflict prevention, such funds are best channelled through the countries concerned rather than through parallel mechanisms.

Since we are preparing for the Johannesburg Earth Summit, at which questions of environmental sustainability are obviously going to be high on the agenda, it will be useful to address briefly the linkages between the social and ecological sustainability issues. We need to emphasise that the key to economic and ecological sustainability is to focus on the needs of the poor and unblocking the obstacles to their economic development. This will create a climate in which there will be both the support for and the ability to meet the needs of ecological sustainability. So measures to open agricultural trade which increase economic activity in poor countries will contribute directly to both the challenge of water service delivery as well as to more effective water resource management. There is the potential for a global deal on these matters,

In conclusion, I need to remind you of the urgency of the challenge of addressing basic water services. Every day, an estimated 6,000 children die for lack of safe water and sanitation as many as died in the September 11th incidents.

Our war against terrorism must be matched with an equally intensive war against these preventable consequences of poverty. As the world economy slows to a crawl and economists worldwide agree on the need for a public expenditure stimulus, we should campaign for at least part of this financial injection to focus on constructive investment in addressing the water challenge.

KEYNOTE SPEECH BY CHEN LEI

Vice Minister of Water Resources, China

As the mankind has stepped into the 21st century, the freshwater shortage and water environment degradation have become the major factors affecting sustainable economic and social development in the world. It has become a wide consensus among various governments and water resources managers to realize the importance of world water safety and take immediate actions. The ministers from the different countries have come to Bonn to discuss the freshwater challenges and coordinate the relevant activities so as to get prepared for the World Summit on Sustainable Development (Rio + 10) to be held next year, which has both practical and long-reaching historical significance for further promoting sustainable utilization of water resources and world sustainable economic and social development.

I would like to take this opportunity to brief the participants of the Conference on China's issues and policies regarding water resources and its sustainable development as follows:

General introduction on water resources in China

Located in the eastern part of the European and Asian continent, China has a large territory and numerous water systems. The total amount of water resources is 2,800 billion m³, including 2,700 billion m³ river run-off.

The main features of water resources in China

- Limited per capita water resources. The per capita water resources in China is only 2,220 m³, which is 1/4 of the world average.
- Uneven spatial distribution. The distribution of water and land resources is not in line with the distribution of productivity. In the south, the population accounts for 46.5 per cent of the national total, arable land 35.2 per cent, GDP 54.8 per cent and water resources amount to 80.5 per cent of the national total. In the north, the population accounts for 53.5 per cent of the national total, arable land 64.8 per cent, GDP 45.2 per cent and water resources is however only 19.5 per cent of the national total. North China suffers from serious drought and water shortage.
- Uneven timing distribution and concentrated precipitation. In most areas, the precipitation in four months from June to September during the flood season accounts for over 70 per cent of annual precipitation. Between different years, the precipitation in wet years is 2-8 times of that in dry years. Moreover, it is quite common to have several wet years or dry years consecutively. These features have made China a country with frequent flood and drought disasters, regional water shortage and fragile ecosystem. Freshwater plays a crucial role in the national development.

Water resources development and utilization in China

China's 5000-year civilization is a history of the Chinese people fighting against flood and drought disasters. Since the founding of the People's Republic of China in 1949, the Chinese government has led the people to develop water resources on a large scale and achievements attracting worldwide attention have been made. By 2000, China had constructed 85,000 reservoirs of various kinds with the total storage capacity of 510 billion m³ and built 270,000 km dikes to form a primary flood control engineering system for large rivers and lakes, which has basically controlled frequent floods and guaranteed safety. Water supply capacity of water projects had reached 580 billion m³ and effective irrigation area amounted to 820 million mu, including 280 million mu water-saving irrigation area, which has formed a sound agricultural irrigation and drainage engineering system. The food grain production in irrigation districts accounts for over 2/3 of the national total food grain production. Therefore China is able to feed 22 per cent of the world population with 10 per cent of the world arable land. China had also controlled 800,000 km² of water and soil erosion area, developed 76,800 MW of hydro power and 653 poverty-stricken counties in the mountainous area realized primary rural electrification. In water resources management, according to the principles of combining river basin management and regional management and management at various levels, China had established five levels of water management at the national, river basin, provincial, city and county levels respectively. China had also issued such laws as "Water Law", "Flood Control Law", "Water and Soil Conservation Law" and "Water Pollution Prevention and Control Law", and legalized water-drawing permit system and water resources utilization upon payment system. Water resources development has contributed greatly to the economic development and social stability.

In 2000, the national total water consumption is 549.8 billion m³, out of which, the agricultural water use is 378.4 billion m³, accounting for 68.8 per cent; the industrial water use is 113.9 billion m³, accounting for 20.7 per cent, and the domestic water use is 57.5 billion m³, accounting for 10.5 per cent. The national average water resources utilization has reached 20 per cent. Overall per capita water use is 430 m³, the water use of 10,000 yuan GDP is 610 m³, water use of 10,000 yuan industrial output is 78 m³, water use of agricultural irrigation is 479 m³ per mu, domestic water use in urban areas is 219 liter/person/day, domestic water use in rural areas is 89 liter/person/day. The national total water supply has increased from 443.2 billion m³ in 1980 to 549.8 billion m³ in 2000. The total water supply has increased

by nearly 100 billion m³ in 20 years. With the development of water-saving agriculture and promotion of water-saving irrigation, the proportion of agricultural irrigation water use in the total national water use has decreased from 97.1 per cent in early 1950s to the present 68.8 per cent. During the past 5 years, under the precondition of not increasing total agricultural water use, an effective irrigation area of 12 million mu has been added every year.

Main issues faced by China

- Serious contradiction between water supply and demand. China suffers from water shortage, especially in the north. With the continuous increase of water demand for social and economic development, water has become a major restricting factor for China's sustainable economic and social development. Based on preliminary estimation, agriculture suffers a water shortage of 30 billion m³ at present and more than 20 million of rural people are difficult of access to safe drinking water. There is insufficient water supply in over 400 cities out of the total 663 cities, which affects 200 billion yuan industrial output. By 2030, the population in China will reach 1.6 billion and the per capita water resources will drop to around 1750 m³. In the meantime, the demand for water supply will become larger and larger with the improvement of people's living standards and social and economic development. Therefore, the contradiction between water supply and demand will become even more serious.

- Flood disaster is still the troublemaker of the Chinese nation. Over 70 per cent of the national fixed assets, 44 per cent of the population, 1/3 of the arable land and more than 620 cities are located in the middle and downstreams of the major rivers, which are threatened by serious flood disasters. Since the devastating floods occurred on the Yangtze River in 1998, the Chinese government has sped up the construction of flood control projects, invested over 60 billion yuan to enhance the dikes of such major rivers as the Yangtze River, the Yellow River and the Songhua River, and built and enhanced more than 30,000 km dikes, which has greatly improved the flood control capacity of these rivers. However, there are still 60 per cent of the cities which have not reached national flood control standards. Almost half of the dikes still have various problems and flood detention areas have not developed enough safety measures. Besides, 50 per cent of the sea dikes have not met designed standards and 40 per cent of the reservoirs are operated despite different kinds of problems. There is still a big room for improvement of non-structural flood control measures. Meanwhile, with economic and social development and urbanization, the wealth and population in flood control areas have increased continuously, which has made flood control and safety even more important.

- Water environment problem has become more and more serious. In 2000, the total discharge of

industrial and urban domestic wastewater reached 62 billion tons, around 70 per cent of which was released into rivers, lakes and reservoirs directly without treatment. In the assessment of 110,000 km of river courses, it is found that 41.3 per cent of the river courses suffered from various degrees of pollution. In North China, annual over-exploitation of ground water reached more than 9 billion m³ and 69 ground water over-exploitation areas have been formed with the total area of 55,000 km². In some areas, the shallow aquifer has been dried up. Water pollution has caused damages to human living environment and worsened the contradiction between water supply and demand.

- Water and soil erosion has been worsened. Water and soil erosion areas in China have reached 3.67 million km², which is 38.2 per cent of the total national territory. Water and soil erosion has not been curbed effectively. Many rivers and lakes in the north have been shrunk or dried up, some inland lakes are disappeared, the pastures have receded or desertified, natural oases have degraded and sand storm has increased.

Objectives of sustainable water resources utilization

- Establish effective water supply and utilization system. Developing new sources and promoting water-saving will help to realize rational water allocation, raise water use efficiency and benefits, and develop a water-saving and pollution prevention society.

- Establish a sound flood control and disaster reduction system. Strengthen the management of large rivers and lakes, construct the flood detention areas and develop the flood control dispatching and demanding systems with dikes as the basis and key water projects as the backbone, so that the flood control standards of the major flood control areas will meet the needs of economic development, and the safety of cities and some crucial areas guaranteed.

- Establish a safe water ecosystem. It is necessary to prevent and control water pollution, protect water resources and carry out water and soil conservation so as to effectively control and reduce water and soil erosion and water pollution, raise the bearing capacity of water environment, and improve the human living environment.

- Establish a modern water management system. A multi-level water management system will be established with the combination of river basin management and regional management on the basis of legal advancement, scientific innovation and system innovation. In this way, water resources will be under integrated management and real-time monitoring, and effective water allocation and water project management will be achieved to guarantee sound operation of water projects and make full use of overall project benefits.

Measures for sustainable water resources utilization

- **Optimal allocation.** Formulate water resources planning, specify water resources macro control index, formulate water allocation schemes and indexes as well as guaranteed measures for provinces, river basins and the whole country; Coordinate domestic, production and ecosystem water use based on total allocated water amount, implement total water use control and quota management for different sectors and different water users, and also implement water-drawing permit; Formulate contingency water supply plan during dry seasons and prioritize water uses, and develop contingency policies and measures to guarantee water use safety; Optimize inter-river basin and inter-region water allocation on the basis of scientific research and analysis; Formulate water rights and rotation systems suitable for the country's situation and market economy.

- **Effective protection.** To formulate water resources protection program of major rivers, rationally divide water function areas, specify the waste carrying amount of river systems and the total discharge of various pollutants so as to realize total amount control for waste discharge; Establish a economic compensation system for water resources protection and ecosystem rehabilitation, formulate GDP statistics index for pollution control; Specify water source protection zones, guarantee safe drinking water for urban and rural population, issue water quality reports of water source every ten days for cities with the population over 200,000; Readjust industrial structure and encourage clean production so as to control pollution at the source; Implement waste water discharge permit.

- **Effective utilization.** Formulate national policies on water-saving, designate micro water use quota for different areas, different sectors and different products, water use index of 10,000 yuan GDP of various sectors, and water-saving evaluation index, develop and utilize water-saving technology and equipment, formulate national policies on water-saving. To increase wastewater treatment and reuse, and industrial water reuse, develop water-saving industry, agriculture and cities to establish a water-saving society. In this way, the water use efficiency and benefits will be improved.

- **Appropriate development.** According to the water distribution and bearing capacity, under the precondition of conserving water, China will develop new sources appropriately to continuously improve distribution and water supply safety, solve drinking water problem in poor areas and guarantee water supply for economic and social development. Construct a batch of water resources dispatching and storage projects to make full use of local water resources; Develop inter-river basin and inter-region water transfer projects in areas with natural water shortage after overall planning and scientific research; Rationally utilize ground water resources in areas

with potential; Increase utilization of rain and flood water, speed up wastewater treatment and reuse, sea water desalination and direct use, and other unconventional water utilization.

- **Scientific management.** Revise "Water Law" and formulate "River Basin Law", "Water-Saving Law" and so on to establish and improve the legal system for water resources management. Promote the water management system with integrated urban and rural water management; Establish an integrated, authoritative and efficient water resources management system for major rivers and develop sound water project operation mechanism to realize effective combination of river basin management and regional management; Coordinate the use of surface water and ground water, the use of local water resources and water transferred from other areas to achieve effective and efficient uses; Establish water resources real-time monitoring system, dispatching system and management information system.

- **Increase financial input.** Divide the rights and responsibilities between the central and local governments, among the governments, market and beneficiaries; clarify the main investor of water projects. Further implement active fiscal policies to increase government input in water resources development and utilization; Establish a rational water pricing mechanism and make full use of the market system to raise funds for water projects; Mobilize the public to participate in water development through policies and measures.

Actions in promoting sustainable water utilization

- **Implement regional water resources allocation** to relieve the contradiction between water supply and demand in the north. In order to solve water shortage in the north, the Chinese government has planned to construct the South-to-North Water Transfer Project. It is planned to divert water from the downstream, middle stream and upstream of the Yangtze River respectively to form the eastern, middle and western routes of the Project, which will realize rational allocation of water resources for the Yangtze River, Huai River, Yellow River and Hai River basins. The eastern route will divert water from the downstream of the Yangtze River near Yangzhou City in Jiangsu Province, then use the existing river courses to transfer water through several pumping stations up to Tianjin City and Shandong Peninsula in the north. The middle route will divert water from the Danjiangkou Reservoir on the Han River, the largest tributary of the Yangtze River, then cross the Yellow River on the west of Zhengzhou City in Henan Province, flow with gravity to Beijing City and Tianjin City. For the western route, five reservoirs will be built on the Dabu River, Yalong River and Tongtian River in the upstream of the Yangtze River, three tunnels will be built under the Bayankela Mountain, and two canals will be constructed to transfer water to the upstream of the Yellow River. The three routes will totally transfer 40 billion m³ of water to the

north, which is equivalent to the annual utilizable water resources of the Yellow River. At present, the preparation of the middle and eastern routes is being sped up and soon the construction will start.

- Develop river basin flood control engineering system to guarantee safety. The Xiaolangdi Multi-purpose Project on the Yellow River has been built to raise the flood control standards of the river sections in the downstream of the project up to a return period of once in 1,000 years. The on-going Three Gorges Project on the Yangtze River is a key flood control project for the middle and downstream of the Yangtze River. Together with the dikes and flood detention areas in the middle stream and downstream, it has formed a river basin flood control engineering system. The project will raise the flood control standards of the Jingjiang section from once in 10 years up to once in 100 years, which will greatly improve the flood control capabilities of the middle stream and downstream of the Yangtze River. Located in Yichang City in Hubei Province, the Project has a reservoir storage capacity of 39.3 billion m³, including flood control capacity of 22.1 billion m³, an installed capacity of 18,200 MW and annual power generation of 84.68 billion KWh. The whole project takes 16 years to construct. It started in 1994 and completed diversion closure in 1997. The first power units will be put into operation in 2003 and the whole project will be completed in 2009.

- Strengthen protection and management to gradually improve the ecosystems in some key areas. In these key areas with serious water shortage and ecosystem problems, it is necessary to coordinate production, domestic and ecosystem water uses, strengthen water resources conservation, protection, management and allocation according to the principle of safeguarding sustainable development with sustainable water utilization. In recent years, the Ministry of Water Resources has compiled a sustainable water utilization plan for the capital – Beijing City and the river basin management plans for the Tarim River and Black River, which have been approved by the State Council. In the near future, the government will invest over 35.2 billion yuan to realize sustainable water utilization and rehabilitate ecosystems in these key areas.

The Tarim River is China's largest inland river with a catchment area of 1,020,000 km² and a main river course of 1,321 km. Since 1969, the downstream has begun to dry up and the total drying up section reached 320 km. Its tail lake – Taitema Lake dried out in 1972. Due to the drying up of the river course, the ground water level in the downstream lowered, large areas of diversiform-leaved poplar forestry died and sand storms increased. Since 2000, the short-term management project has started, water has been transferred from the Boston River to the downstream of the Tarim River for three times with the total amount of 700 million m³, which has improved the ecosystem in the downstream of the Tarim River and enabled the Taitema Lake to resume water ecosys-

tem. In the meantime, water has been transferred to wetland and lakes to improve the ecosystem in Zhalong Wetland in Heilongjiang Province and water ecosystem in the Tai Lake.

- Reform water management system and strengthen integrated water resources management. China is currently implementing a multi-ministry water management system, which separates surface water from ground water, water supply from water use, waste discharge from waste treatment. This system can no longer satisfy the requirement of sustainable water use, conservation and protection. Learning from relevant experiences, the Chinese government has started to promote the water-affairs management system in urban areas with integrated management of water source, water supply, water use, drainage, waste water treatment and reuse. In the whole country, 820 water affairs bureaus have been set up at the city or county levels, which accounts for 40 per cent of the total administrative areas. This system has improved urban water use efficiency and management, which has relieved water shortage to certain extent.

After the strengthening of integrated river basin water resources management, the Yellow River was not dried up last year although it was a very dry year. At present, the Yellow River Conservancy Commission is taking actions to further integrate water resources management to realize four objectives: no break of dikes, no drying up of river course, no exceeding of pollution, and no raising of river bed.

- Strengthen water conservation and protection and raise water-bearing capacity. Agricultural water use accounts for 70 per cent of the total water use in China. Due to the backward irrigation technologies and extensive water use, water is mostly wasted in agricultural use. The Chinese government has regarded water-saving irrigation as a revolutionary measure and invested 43 billion yuan in recent years to construct water-saving irrigation projects and promote advanced water-saving irrigation technologies. It has constructed the water-saving and production-improvement demonstration areas in 300 counties and rehabilitated over 260 large irrigation districts with the focus of water-saving and efficiency increase. The irrigation water use per mu decreased from 476 m³ in 1995 to 439 m³ in 2000. In the meantime, China also strengthened water resources protection, established water source protection zones, implemented pollution prevention and control projects for the "three rivers and three lakes", namely the Huai River, Hai River and Liao River; Tai Lake, Dian Lake and Chao lake. Obvious results have been achieved.

China is willing to participate in relevant international water activities, increase exchanges, enhance understanding and promote co-operations. Let us join hands to take immediate actions and make concerted efforts to solve various problems faced by the international freshwater sector, guarantee global water safety and contribute to the sustainable economic and social development of of mankind.

ADDRESS OF HIS ROYAL HIGHNESS THE PRINCE OF ORANGE

I wish to thank the organisers for inviting me as an observer to your deliberations. As an observer I will only say a few words.

People frequently ask me what made the 2nd World Water Forum, held in The Hague last year, so successful. The massive stakeholder participation in the preparatory process, the World Water Vision, certainly contributed to its success. But our choice to organise the Forum together with a Fair and a Ministerial Conference, in one building and in close interaction, also proved to be a formula for success.

The Ministers were undoubtedly inspired by the creative ambiance of the Forum and the Forum participants were inspired by the high level interactions with policy makers. It was not an easy decision to give up on individual speaking time for all participating countries. However, the direct interaction among Ministers and between Ministers and stakeholders that replaced the country statements was perceived by many as the most productive part of the meeting. However, the real success of The Hague can only be measured after 40 years. Hopefully our successors can and will say the reason we have been able to avoid a global water crisis was a process that started in The Hague and continued in Bonn, Johannesburg and Kyoto.

I am pleased to see that the organizers of the Bonn Conference have not only adopted a similar approach, but added a new dimension to it. Here the Ministers meet at the beginning of the conference and instead of approving a pre-negoti-

ated text, you are provided with an opportunity to give guidance and inspiration to the entire conference.

As we concluded in The Hague "Water is everybody's business", and your contributions as leading policy makers are of crucial importance. In order to improve water management and put poverty alleviation at the heart of it, we need your political commitment. The world water crisis challenges all of us and it is your political commitment to address this crisis and to assure that water will have a central place on the international development agenda at the Johannesburg Summit next year.

The UN Secretary General invited me to join a group of eleven others to contribute towards the success of the Johannesburg Summit. A crucial objective will be to demand attention during the Summit for the dire need for improved water management and the links it has with poverty alleviation. Earlier today the Conference Participants in the plenary session were invited to provide concrete recommendations and clear suggestions on what we would like the world to agree on in Johannesburg. I would like to make the same request to you and shall, as your Ambassador, take your messages forward as we work together towards better water management.

I wish you productive deliberations and look forward to your conclusions.

I thank you.

III.3 Multi-Stakeholder Dialogue

ADDRESS OF HIS ROYAL HIGHNESS THE PRINCE OF ORANGE

I am honoured to have been invited to address you. This meeting is an important milestone on the road to better water management. I hope and expect that it will provide significant input for the Johannesburg summit next year. The UN Secretary General, Mr Kofi Anan, has asked me – with eleven others – to help him prepare for that summit. My primary assignment will be to demand attention during the Summit for the dire need for improved water management and the way this can contribute to poverty alleviation. So I have come here to learn and listen.

Water and Poverty

In March last year we hosted more than 5,000 people, including more than a hundred ministers and over 600 journalists, in my home town, The Hague, to demand the world's attention for the world water crisis. Together we have put water on the map. We emphasized the need for better water management, yes, but as a means not as an end in itself. Water is intricately linked with most of the development challenges we are facing.

I would like to give you several examples. It is generally acknowledged that the reduction of population growth is closely linked to the level of education of women. But where water is not easily accessible, women spend their days walking to distant wells and waiting in long lines – they cannot go to school. Another example is related to health. Worldwide we see a revival of interest for health issues. We, as water experts, probably need to remind ourselves how many of the most urgent health issues are water-related. Millions of people are dying each year of diarrhoea – not a disease for which we need a costly search for a vaccine, but a disease that can be eradicated through a combination of clean water supply, sanitation and hygiene education. Many other diseases are water-borne, as to mention bilharzia, dengue fever and malaria, together responsible for high morbidity and mortality rates. Reduced population growth and healthy people are key pillars for addressing poverty.

For many people the way to improved income levels is also closely related to access to water. Improving poor people's access to water for agricultural production can result in major changes like for example poor women farmers moving up from marginal subsistence farmers to producers for the market giving them and their families access to a decent income. Examples like these are numerous and – there certainly are – "water-stories" underpinning health and environmental

issues, climate change and soil degradation. All today's major cross-cutting issues play an important role in our efforts to improve water management. This ranges from the public-private sector debate, to globalisation and global governance, the impacts of science and technology, to the resolution of conflicts at sector, basin and transboundary levels.

Improving water management is crucial, not as an end in itself, but as a means to achieve development goals. Because, let me remind you, ladies and gentlemen, the consequences of failing water management hit the poor first and hardest. This was a key conclusion embedded in the declaration of the Ministerial Conference that was linked with the 2nd World Water Forum in The Hague last year

Bonn Conference

I therefore congratulate the organizers of this Conference for having chosen water and poverty as a central theme. With the Johannesburg summit coming up this is very appropriate indeed. Poverty alleviation through improved water management implies recognition of the rights of the poor. In The Hague stakeholders demanded governments to recognize access to water for drinking and productive purposes as a basic human right. Here in Bonn we will have to respond to this demand. However, getting water recognized as a basic human right will be a lengthy UN process which won't render immediate benefits. It is therefore important that we simultaneously use our time and energy to work on practical solutions which will benefit the poor in developing countries.

Water for poverty alleviation means access to water for poor people. Access to water means sharing control through democratic decision making processes. Sharing control implies a seat at the table for all stakeholders. That is what I am talking about when I say that we need to make water everybody's business. I honestly believe that the outcome of our final analysis will be that simple. I am confident that the multi-stakeholder dialogue that is part of this conference will make an important contribution as we have to be more explicit on how we are going to act upon the outcome of our analysis.

Progress and new initiatives

In The Hague I asked the participants to take up the challenge and become ambassadors for water – to help start a water movement and make



His Royal Highness the Prince of Orange at the Multi-Stakeholder Dialogue.

water everybody's business. In the 18 months since we met in The Hague I have noted significant progress, even though our achievements are still modest compared to our ultimate goal. The Collaborative Council on Water Supply and Sanitation has met in Foz de Iguacu in Brazil and started the implementation of their Vision for water for people – Vision 21 – with the kick off of a sanitation campaign. Our Japanese friends accepted the responsibility for organizing the 3rd World Water Forum when I handed them a huge gold Forum key in Osaka in April last year. We all have been able to witness the great effort with which they are organizing the 3rd World Water Forum. The Global Water Partnership has kicked off implementation of their Framework for Action. I am proud to be their Patron and will gladly launch their toolbox on Integrated Water Resources Management later today.

Next we have to look at some new Dialogue initiatives addressing key challenges that were set as priorities in The Hague. Last August in Stock-

holm, I had the privilege to launch the Dialogue on Water, Food and Environment. As a Dialogue Ambassador, I urge you to consider how you can contribute to the key issue of achieving water, food and environmental security. A second Dialogue, on Water and Climate, is launched here in Bonn. Both Dialogues are presented in side-meetings later today, one after the other in the same room, and I hope you will join me there.

Finally, as I mentioned earlier, Mr Kofi Anan invited me to contribute towards the success of the Johannesburg summit. My primary objective will be to ensure that water gets a central place on the agenda. I invite you to become my allies and provide me with concrete recommendations and clear suggestions on what you would like the world community to agree on in Johannesburg. I shall make it my job to take your messages forward as we work together towards better water management.

I thank you.

III.4 Closing Session

CLOSING ADDRESS BY HEIDEMARIE WIECZOREK-ZEUL

Federal Minister for Economic Co-operation and Development, Germany

The international conference on freshwater has come to its end. You have worked hard during this past week, on some evenings to very late hours. Your efforts have been worthwhile. The conference is a success.

You have developed recommendations for action to make water a key to sustainable development, and you have identified the "Bonn keys" as the priority actions to focus on. I congratulate you on this remarkable achievement.

I. At the end of a conference, it is always useful to ask two questions:

What have we learned that we can take home?
What impact will our conference have?

Let me try to give some answers to the first question and then to the second.

What have we learned ?

We have learned that the need for action is more urgent than ever. Water is a key resource for a sustainable development and for a just and more peaceful world.

Water is crucial for peace. There are too many disputes, even conflicts, about water today, in

almost all regions under water stress. I am not only thinking of disputes between countries and states, but also between communities, upstream and downstream, or even disputes within communities.

We have learned that water is crucial for justice and social development.

Let me quote from the Ministerial Declaration which the ministers adopted on Tuesday: "Safe and sufficient water and sanitation are basic human needs." When the poor have no access to water, it denies them the decent standard of living to which they are entitled as a human right.

Water is also crucial for our environment. When the rivers fall dry, when fields turn into desert, life for humans becomes difficult and they move elsewhere.

All this we know, and yet, there is not enough dynamic progress toward the goal of water security for all. A key question before this conference was : What needs to be done to reach the International Development Target from the Millennium Assembly: "To halve, by 2015, the proportion



Heidemarie Wieczorek-Zeul is summing up the last four days.

of people unable to reach or to afford safe drinking water."

We know better now what it takes to reach that target, how much we need to expand infrastructure, how much money we need to finance it. The Multi-Stakeholder Dialogue produced some concrete numbers. Let me quote from the conclusions:

"If we are to meet the goal, we will have to provide new access to safe and affordable water each day for more than 300,000 people. If we had a similar target for sanitation, an extra 390 000 people per day will have to be provided with new services."

Financial needs for investment in the water sector are at 180 billion Dollar per year; presently, the level of investment is between 70 and 80 billion dollars. There is a gap of roughly 100 billion dollars year.

So we have learned more about the nature and the magnitude of the challenge.

We have also observed that our strategic orientation in the water sector has changed. We are not only concerned about good, integrated water management, but our principal concern is now about water for the poor.

Let me make it clear: good professional, integrated water resource management is important and we need to work hard to improve it. But this is not enough. We must have the focus on fighting poverty. This is the over-arching goal for our international co-operation. This implies some re-ordering on our policy agenda.

Just as an example: the health risks from lacking water supply and sanitation are perhaps the highest barrier to more social justice. The children of the poor who die before they turn two or three years are not visible because they die before they have a chance to meet us.

Now let me turn to the other question:

What impact will this conference have?
Where are our priorities for action?

First: the political impact of this conference is remarkable. Just the fact that we had ministers here from 46 countries shows that our decisions and recommendations for action will carry political weight. The Declaration which the ministers adopted is before you. It demonstrates more of the political will which we urgently need to come to real action.

Second: With the "Bonn Keys" which you have developed we will hopefully get the attention in the public which has been lacking quite often for these issues. Political will needs pressure from the public. This is how democracies work, and this is why the Bonn keys are an important outcome of this conference.

Let me highlight some of the actions which you have given priority recommendations.

Governance and participation

There is consensus that the role of government in water affairs needs to change. Responsibility and authority to make decisions must move closer to the people and the water users. The poor have better knowledge how to manage their own water affairs than many officials far away. You have recommended actions to accomplish this, and you have drawn on good experiences.

Let me also congratulate you on the outcome with regard to gender and water issues. We will not make any progress unless women are equally involved.

Better accountability and decentralize management can also help to combat corruption in the water sector. This is a challenge in almost all countries and societies, including my own. Someone has said that corruption is a bigger leak in the water sector than rotten pipes. Mind you: this is not because there may be more unethical people in the water than elsewhere. It is because the high capital investment requirement in the water sector makes it prone to unethical behaviour. You have made specific recommendations how to combat corruption. The private sector has underlined the commitment to a code of conduct against corruption. This is real progress.

Public-private partnership

The role of the private sector in water infrastructure and services has been a sensitive issue at this conference. On one hand we need and we want the partnership with the private sector.

On the other hand, there is concern that control over the resource water might slip away from the public and that the poor may suffer. The recommendations show real progress on a way forward. The key is to create an environment which both allows the private sector to work successfully, and at the same time maintains the authority of the public to define rules under which the providers operate.

Let me add that benchmarks for success of service providers of course include business success, and that means profits, but first and foremost good service to water users, including, not excluding, the poor.

We want efficient, responsive and financially sound service providers, whether they are from the private or the public sector. And we want the private sector as partner in development. When we look at the magnitude of the challenge in developing countries, it is not possible for the public sector alone to provide adequate answers. The public sector needs to open up to partnerships with business, and let me add, not only with business, but also with local and community-based initiatives.

There are legitimate concerns, however, from stakeholders who feel disadvantaged and powerless vis-à-vis large international service providers. I welcome the proposal to begin a stakeholder dialogue

to review the issues linked with privatisation, because it could lead to a better understanding of successes and failures in this regard.

Mobilising financial resources

This conference has made a big step forward on the issue of how to mobilize more financial resources for water services. You have pointed to steps to allow water tariffs to sustain operations and investment. This remains a priority, and at the same time the poor who cannot pay must be able to get water for their basic needs. In our ministerial meeting, Minister Ronnie Kasrils from South Africa has impressively reported on progress in South Africa to achieve both: better financial sustainability and basic service for the basic needs of the poor. These are the practical steps forward which we need coming out from this conference.

As a development minister, I am fully aware of the crucial role which development assistance has for the water and sanitation sector in many developing countries. I am known as someone who fights with a lot of energy for an increase of official development assistance, and I sincerely hope that we can achieve a time-table until Johannesburg.

The past few months, the terror attacks of September 11, have strengthened the conviction that a peaceful and sustainable future is only possible through serious dialogue and long-term, reliable, partnership-based co-operation. This includes a fair balance of interests between industrialized and developing countries and increased investment in development. I see more political support growing for a strengthened development policy and co-operation.

What will the German government do with the outcome of this conference?

1. We will do our best to disseminate the outcome of this conference and to feed it into the preparatory process for Johannesburg. The Secretary General of the World Summit, Nitin Desai, and many others have underlined that the issues linked to natural resources like water and energy have an important place on the agenda of the Summit. We also count on all of you and your delegations preparing the Summit to ensure that the Bonn recommendations are heard. The outcome of this conference will be presented to the next meeting of the Preparatory Committee for Johannesburg, in January in New York.

2. The water sector has been a priority in German development co-operation for many years now. Our implementing organizations, in particular KfW and GTZ, are well known throughout the world, and we spend between 300 and 400 million EURO each year to support partners. Improvement of water supply and sanitation for the poor is a key element of the German Program of Action for Poverty Reduction which defines our contribution to reaching the target. Our develop-

ment partners want water and sanitation services to remain a priority in our co-operation, and I will remain responsive to these requests.

3. We want to make our assistance more effective, more focussed and better targeted for the poor. We will therefore evaluate our development assistance during the next year to make sure that the recommendations of this conference are applied. We hope to have the conclusions from this evaluation ready by 2003 so that we can feed them into the Third World Water Forum in Japan.

Thanks

The German government is proud to have hosted this conference. You have been hard-working, dedicated participants and wonderful guests, and it was very pleasant to have you here in Bonn. In particular I want to thank my fellow ministers, some of whom came a long way. You have given the political drive to this conference with the Ministerial Declaration.

Many persons contributed to the successful outcome. I cannot recognize them all now, but I want pay special tribute to a few.

I want to say special thanks to all participants who have chaired meetings or given reports. You have done an excellent job, your input, especially from the working groups, was essential.

A very special contribution has been made by the facilitator Margaret Catley-Carlson, who has been assisted by other facilitators. Your professional experience and your sensitivity in dealing with delicate issues has, I believe, reassured many participants that there would not only be a consensus, but also a good, substantive outcome.

Thanks also go to the International Steering Committee which has met three times to advise us, the conveners, as we prepared the conference.

I also want to thank all who were involved in the Multi-Stakeholder Dialogues. The reactions which I received tell me that these dialogues had an intensity of exchange which had been rare before, a success on which future meetings can build.

The Secretariat for the conference has been provided by GTZ, and I want to thank the secretariat for its dedicated and tireless work during long weekends and late nights. After we are gone, you will get the sleep which you deserve.

Lastly, I want to thank the officials in our ministries who have guided the preparations and assisted my colleague Juergen Trittin and myself in chairing the conference. And I count on them to help us bring this outcome to Johannesburg and to the third World Water Forum.

Thank you again for coming here and giving us the honour of your presence. May you all have a good and safe journey home.

CLOSING ADDRESS BY KADER ASMAL

Minister of Education, Republic of South Africa

Let me begin by apologising for not being personally present to deliver this address. Over this last weekend I fell and injured my foot which caused considerable internal swelling and bleeding and my specialists strongly advised me against travelling. I was very much looking forward to being with you.

It may seem at first odd that a Minister of Education has been asked to address a conference on freshwater. My response is that the solutions are all about education – not only in the formal sense in classrooms or lecture theatres, but in its widest sense of raising awareness, researching and examining options, releasing the creativity and resources of local communities, and building capacity to implement solutions in a sustainable manner. Education does not begin or end at the classroom door.

After several days of hard work in these workshop rooms, many of you may switch off at the prospect of another lecture. But bear with me.

Far from being students, in fact we have all become teachers. Just examine the list of technical assistance projects in the portfolio of multi-lateral agencies – how frequently do the terms “capacity building” or “institutional strengthening appear”? Yet are we equipped for this? Have our training methods changed to prepare us for this challenge?

Are our engineers taught how to involve people in an open process and deal with non-conventional solutions? Do we know how to communicate effectively across disciplines? Do we have the experience to accommodate gender perspectives to maximise the impact of our developments? Have we learnt that the time-bound procedures of project planning and appraisal have to adapt to a more participatory approach?

It is hard, make no mistake, but this is the one overriding failing that we have to address – how to involve people in a constructive and honest way and how to ensure we make best use of ideas that we all have to offer.

I am reminded of a cartoon I saw last year prepared for the Water and Sanitation Programme. It graphically depicted the struggle we face. Picture a group of bureaucrats and developers sitting around a boardroom table discussing the plans and contract documents for a new water project. Outside the door, was a group of dejected women and men carrying empty water jars. In response to their request for an audience with the decision-makers, the Chair of the meeting instructs his personal assistant, “of course they can participate – as soon as our planning is over”.

This sentiment can no longer be tolerated. We can and must do better.

It is fitting that a politician is asked to address this closing session; for it is at a political level that direction is needed first. We have the technology and with the right incentive mechanisms, we should also be able to find the money. What is needed is political commitment to prioritise action on the ground, to overcome the institutional bottlenecks, to stimulate the capacity of people to participate in the process, and to overcome destructive consequences of conflict and controversy and build effective partnerships based on good faith of all parties.

I have become passionate about water, particularly the needs of the poorest of the poor – people who live on the margins of our society. For most of us the centrality of water in our lives is seldom recognised until our access to water is restricted. Yet 1.2 billion of the world's population do not have ready access to clean water. Above that we know that agriculture is demanding more not less water, and that the environment and those that depend on it are suffering due to unsustainable levels of abstraction, changes in flow patterns and uncontrolled pollution.

In the 1980s we had the decade for International Water Supply and Sanitation, yet now the provision of water supply services at a global scale is only just keeping pace with the growing population. From year to year, the number of those without safe and clean water remains constant. To halve the percentage of people without access by 2015, we are told we have to increase our current efforts by 30 per cent.

Can we do this, and is halving the percentage without water supplies really enough? Moreover, we all know that the numbers representing those already supplied often hide unreliable and unsustainable services. With today's wealth and sophistication, we have an obligation not only to meet, but also to exceed these targets.

When I was appointed Minister of Water Affairs and Forestry in South Africa's first post-apartheid government, my initial task was to understand how our history of water resources management had affected different communities and sectors as well as how our future water needs could be met in a sustainable and equitable manner.

Scarcity quickly emerged as both an absolute and a relative issue. At its most basic level scarcity defines an individual's access to water – without it, survival is impossible. Beyond that we face a complex array of parameters and interests that



Kader Asmal addresses the Conference participants.

determine levels of scarcity of this precious resource.

Can we really define global standards of water scarcity? Maybe simple statistics based on cubic metres per capita is a beginning. However, in the end, it depends on our fundamental values and priorities. On the priorities that we assign to ensuring equity of distribution, efficiency of water delivery, reducing wastage and encouraging treatment and re-use.

In South Africa we had a pressing and obvious need for change – the window of opportunity was there. We provided a framework within which the rights of people and needs of the environment are protected. But changes do not happen overnight and they will not happen unless the messages emerging from meetings like this are acted upon.

My question here today is whether we have to intensify the crisis before the necessary reforms are made? And your answer is that we do not, we cannot and, if we take the right steps, we will not.

Deep down we know a "business as usual" approach is not going to provide the answers. We need to know how we will sustain rivers and the livelihoods that depend on them; share benefits more equitably; examine all the options; gain public acceptance and provide confidence to investors; ensure compliance with our commitments; and promote water as a catalyst for peace rather than as a cause of conflict.

It is inconceivable that I could stand here and not mention dams, although some professionals who met here in Germany only three months ago might prefer if I was silent on this issue. So, what is my position?

I could say, "If by 'dam,' you mean the nation-building instruments that feed us, bring water and light into our homes, protect us from devastating floods, the temples which ensure nations develop... then I am for them".

Or I could say, "If by 'dam' you mean the billion-dollar white elephant that block our nations' arteries, force millions from their homes, silt up in 50 years, and kill fish and impoverish livelihoods...then I am certainly against them".

But we cannot say this any longer. We know better. We have a better understanding of needs, and capacity, and options, and impacts, and we must now make the difficult choices based on that understanding. The time for tunnel vision, taking only our own perspectives into account, is over. Neither can we sit on the fence and do nothing.

Regardless of what you might have read I agree that dams remain one important option in response to growing development needs. However, to turn that option into an ideological crusade – by either side and for whatever reason – would not only be doomed to failure but ultimately dis-

enfranchising. It pre-empted whole societies from making an informed choice which is their sovereign and human right. But an informed choice it must be.

Some might like to remove the World Commission on Dams from the history books. But where does that take us – only back to controversy. The result will be to undermine investor confidence, stagnate development and prove the doomsayers right. Avoiding the issues will not solve the problems. As we said in our report, it is not intended as a blueprint, but rather a first step from which to build.

We have shown that it is possible to conduct a civilised and constructive dialogue on some of the most intense issues facing us. It is now up to individual societies to consider the best way of moving forward. The issues are not about dams alone, but all forms of development. They are the same issues that we face whether we talk of water supply provision or pollution management. We have to squarely face the consequences of intransigence and vested interest.

The debate about water resources management today is primarily a debate of the South – not of the North. It is in the South that dams are being built, that pollution is at its worst. It is in the South that the dilemma of pressing needs and limited resources is faced on a daily basis, it is in the South that governments and their citizens are engaged in a continuous debate how to overcome underdevelopment and the painful realities of poverty and inequity. It is in the South that we must confront the dependency on foreign aid, investors and technology transfer.

Let us not fall into the trap of a self-serving elite both in the North and in the South who characterise the objective of good governance as a Western phenomenon, which we cannot afford in the South. We must recognise the challenges we face in developing countries both in terms of nation building and our dependencies in the global economic context. By advocating efficient, effective and accountable decision-making we build on the lessons learnt. We also recognise that without good projects we are unlikely to succeed in attracting capital, technology and partnerships that are essential to overcoming our current resource constraints.

In Africa, we are grasping the initiative ourselves. We recognise our responsibility to act. My following comments on the New Partnership for Africa's Development (NEPAD) ring true for us here today. Let me quote from President Thabo Mbeki's recent address to the South African National Assembly.

"A new partnership for development was possible when many of our people on the continent came to the common determination that proper adherence to good economic governance, aimed at the emancipation of our people from poverty, is as important as ensuring political democracy...

...what is required to mobilise the resources and use them properly, is bold and imaginative leadership that is genuinely committed to a sustained effort of global upliftment and poverty eradication...

...we must strengthen democracy on the continent; we must entrench a human rights culture".

Nowhere is the sense of mission more relevant than in the provision of water to the people who need it. Good governance is at the heart of the challenge. Only decision-making processes conducted in an open and transparent manner and inclusive of all legitimate actors and leading to negotiated outcomes, are likely to resolve the many pressing and complex problems you have struggled with this week.

I am very pleased therefore to learn that the New Partnership for Africa's Development has taken a concrete form at your conference. African Water Ministers have agreed to join hands and institutionalise a forum for more effective integrated management of water resources. I wish them well.

The challenge of moving the sustainable development agenda forward is more acute now than ever before.

In today's world, gaining the confidence of developers, financiers and communities alike by reducing risks to all concerned is essential. And I do not mean just the financial risks and risk to corporate reputations. I mean also the risks imposed involuntarily on people that result from decisions taken in boardrooms and around cabinet tables. Remember the cartoon, and the desperate people standing outside the boardroom door.

Let me take one simple example from my work over the past three years and try to understand why it is so contentious – it is resettlement and the plight of people adversely affected by development of whatever kind. Those people that just happen to be in the "wrong" place for no fault of their own. This aspect alone challenges agencies to deliver on their commitment to poverty reduction.

Is it so unreasonable to consider that those adversely affected should benefit as a result of an imposed development? At the Second World Water Forum in The Hague, World Bank Vice President and Chair of the World Commission on Water, Ismail Serageldin, said that the disadvantaged should not be impoverished in the name of development. A recent internal World Bank evaluation of involuntary resettlement practices states that "merely aiming to restore standards of living... can be a dead-end development strategy". I agree fully.

Yet multi-lateral agencies still appear reluctant to fully embrace resettlement policies that incorporate the notion of development for the displaced

and sharing of benefits. To me, the resettlement programme could itself be a development opportunity not an added burden.

Unless we are prepared to change our entrenched views, I seriously doubt the results of the next two decades will be any different to the last two in making water poverty a thing of the past.

This also applies to shared waters. In Stockholm last year, I delivered a lecture whose thesis was to challenge the assumption of the American writer, Mark Twain, whose most famous quip about water scarcity in California was, that: "Whisky's for drinking and water's for fighting over."

Many agreed with that argument then, and some still do. I do not.

I grounded my arguments squarely on my experience of shared waters that unite us in Southern Africa, and, looking at potential trans-boundary issues elsewhere in the world, on the fascinating research of Aaron Wolf of Oregon. Mr Wolf and his researchers investigated and tested unchallenged assumptions. His contribution to this conference again supported the quiet minority of those of us who feel that, despite the hype and sabre rattling, "water wars" were neither possible, looking at the past, nor probable, given the future.

I concluded in Stockholm that Twain was exactly wrong: we may fight indeed over scarce supplies of whisky, but freshwater is for collaboration, for sharing, and for peace.

Returning to the comfort of this Conference on this winter's day, the organisers of this Conference should be congratulated for focussing our minds on water and challenging us to develop pragmatic recommendations for the Johannesburg summit. Water has to be prominent.

But lets not be complacent. The downside of all this international policy dialogue on water is that we speak in generalities, we lose focus on the women walking miles to fetch water, on the urban squatters paying significant proportions of their daily income to water vendors and on the children playing in disease ridden pools among festering waste.

These are images that we need to carry in our minds back home, to question what we are going to do on Monday morning when we sit at our desks, and what we can achieve in our own spheres of influence in the nine months before Johannesburg. It is a gestation period that should bear fruit.

For we can all make a difference between now and Johannesburg, lets not sit contentedly and accept the constraints that are imposed on our work. Lets raise the questions and look for answers. Lets really target water and poverty. Echoing the concluding remarks in one of the

these papers "The Bonn International Conference can and must play a critical role in stimulating enthusiastic follow-up by governments". We should meet again in Johannesburg being able to point to the difference that Bonn made.

As a lawyer and an educator, and someone who has faced the intricate challenges of reforming the status quo in the water sector, I keenly hope that we can turn the page on our performance in the 1980s and take a major step towards achieving, and exceeding, the targets we set. Legal and regulatory reform is a first step and the challenge for the politicians, but as our experience has shown in South Africa, the real challenge lies in effective implementation.

And that is where we all play a role. The politicians will signal new priorities, the planners and

designers amongst us will integrate other perspectives, the administrators will go beyond artificial constraints imposed by bureaucracy, the NGOs will provide a bridge to community involvement and raise environmental awareness, the activists will join hands to find solutions, and the disadvantaged will enjoy a new climate within which they can take responsibility for their own future.

I look forward to greeting you in Johannesburg, sharing our experiences, evaluating the fruit of our labours here and greeting you with a toast – "Prost".

I end with the Xhosa saying *Amanzi angumthombo wobomi* – Water is a source of life.

And in Zulu, Siyabonga – I thank you.

CLOSING ADDRESS BY JÜRGEN TRITTIN

Federal Minister for the Environment, Nature Conservation and Nuclear Safety, Germany

First of all I would like to thank you, Ms. Catley-Carlson for your excellent report on the "Recommendations for Action". These very specific and practical recommendations for action and the adopted Ministerial Declaration have helped the conference to a very successful outcome.

I would like to highlight four particularly important aspects:

- Efficient water management is the key element in the fight against poverty and for sustainable development.
- Efficient water management largely depends on good governance.
- There are many advantages to the so-called "small-scale solution". Efficient water management can be best achieved in a decentralized approach, because local residents take the greatest interest in the long-term availability of their water resources.
- All stakeholders have to be included. The dialog between governments and industry, between governments and organisations is extremely important. Co-operation and partnership between the government and the different groups within civil society are necessary preconditions for sustainable water management. Most of all, all target groups have to be included, men and women alike.

Any interference from outside will change the social balance locally, for better or for worse. This holds especially true for the water sector. We

must therefore consider the heterogeneity of the local and regional population and the existing differences between male and female roles right from the beginning. We must carry out simulation runs to see if the planned initiative widens an existing discrepancy, or whether it actually provides new short and long-term opportunities for the formerly disadvantaged.

Water projects, if approached properly, provide an outstandingly suitable instrument for giving girls and women free time they can spend on education and also on the generation of income. What is important, though, is to support this process in consensus with the local population by implementing a policy of gender equality also in other areas, such as in landownership legislation and in law of succession.

I trust in your dedicated commitment that by the time of the Johannesburg conference and the World Water Forum in Kyoto in 2003 we will be able to present some encouraging examples of how to link sustainable water management to the empowerment of women.

But as a minister of one of the industrialized countries I also want to address the homework that we have been assigned by this global conference. We must clean up the traces left behind by our ecological footprints, so that 1.2 billion people in the South that have insufficient access to water will be granted development opportunities.

This is why we in the North need to cooperate intensively with the manufacturing industry, with



Jürgen Trittin says good-bye until the WSSD in Johannesburg.

trade and marketing companies, with Local Agenda initiatives, NGOs, churches and unions in order to establish sustainable consumption patterns. Just as an example, it is healthy to wear cotton, but it is not healthy for this planet to produce the amount of cotton needed for all the T-shirts and jeans that people in the North like to have in their closets.

It is not enough to show distress when watching films about the fields in Uzbekistan and the Aral Sea, which is increasingly getting smaller. Instead, we must give new shape to one of our favorite pastimes, shopping. Beautifully designed, unique and high-quality merchandise has to take the place of throw-away mass products. That way, we will protect jobs and our life support system, planet earth.

We will all be leaving Bonn with many suggestions and ideas. I am especially pleased that Nitin Desai intends to propose the form of co-operation and dialog practiced at this Freshwater Con-

ference in the context of the Multistakeholder Dialogue as a model for preparing the World Summit on Sustainable Development in Johannesburg. A particular word of thanks goes to him. Through his active participation he has given much weight to this international preparatory conference and has moved it much closer to the UN preparation process.

I would like to end by thanking all participants who have helped to advance this conference with their contributions.

I would also like to offer a most heartfelt word of thanks addressed to the members of the International Steering Committee which has given us very competent support before and during the conference. Last but not least I thank the interpreters who have served as a reliable communicative bridge between the participants.

I wish you all a safe journey!

We all see each other in Johannesburg.

DECLARATION OF AFRICAN MINISTERS RESPONSIBLE FOR WATER RESOURCES, PRESENTED BY EDWARD LOWASSA

Minister of Water and Livestock Development, Tanzania

We, the Ministers responsible for Water Resources, from African Countries, attending the International Conference on Freshwater (Bonn, December 2001) are fully aware that:

Our Concerns

As elsewhere on our planet, water is the key natural resource throughout Africa. An adequate supply of clean water, sanitation and hygiene are the most important preconditions for sustaining human life, for maintaining ecological systems that support all life and for achieving sustainable development.

Water is abundant in Africa on a regional scale but is unevenly distributed by nature. Although a few African countries have high annual averages of rainfall, many already or soon will face water-stress or scarcity conditions where the population cannot be sustained with available water resources. Given current population projections, over 400 million people are expected to be living in at least 17 water-scarce African countries by the year 2010. Their lack of water will severely constrain food production, ecosystem protection and socio-economic development.

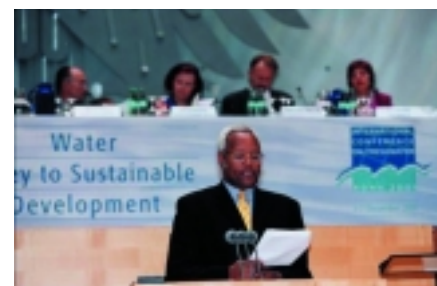
With recurring droughts and chronic water shortages in many areas the majority of African Governments and people pay an increasingly high price for water or the lack of it. The highest price

is often paid by the poor majority in terms of money to buy small quantities of water, calories expended to fetch water from distant sources, impaired health, diminishing livelihoods and even lost lives thus exacerbating the cycle of poverty. Today over 300 million people in Africa still do not have reasonable access to safe water. Even more lack adequate sanitation.

A decade after the United Nations Conference on Environment and Development More Africans lack access to safe water and sanitation. Almost half the people of the African continent suffer from water-related diseases. The result is economically crippling, and from a humanitarian standpoint, simply degrading.

Aquatic species, habitats and ecosystems are also at risk. With increasing water demand throughout Africa to support greater agricultural productivity, industrial expansion, rural and urban growth, more water to meet human needs means less for maintaining aquatic ecosystems and the many other species and environmental services they support.

Water in Africa is crucial for sustainable national development but rarely confined to the boundaries of a single country. With over 50 major international water basins in Africa, two or more countries share most watercourses. Most inter-



Edward Lowassa presents the African Ministers' Declaration.

national basins are without any agreements on equitable use or environmental protection. Few have effective institutional arrangements for consultation or co-operation. Procedures for avoiding all resolving international disputes over water are largely lacking.

The Challenges

The multiple challenges confronting our continent have led to the adoption, by the African Heads of State and Government of the New Partnership for Africa's Development (NEPAD). Poverty, whose most critical manifestation is the lack of adequate water and sanitation for our peoples, remains a major challenge. In support of the continent-wide quest for durable solutions, some African Ministers responsible for water met in Nairobi and Abuja (October and November 2001 respectively) to consider a strategy in support of NEPAD in order to ensure that it accords a higher degree of attention to the water and sanitation crisis. The already ongoing subregional initiatives in Africa provide solid foundation for our strategy.

The Ministers responsible for water in our region have resolved to put water, sanitation and hygiene issues from the margins to the centre of sustainable development agenda in Africa. It is our hope that the Johannesburg 2002 Summit and the 3rd World Water Forum to be held in Japan in March 2003, will contribute to the needed solutions.

The Way Forward

We, the African Ministers responsible for water attending the Bonn Conference express our appreciation of the opportunity to renew and refocus the attention of the international community on the water problems.

We call upon the cooperating partners of Africa and the international community to support a regional and global alliance for tackling the water and sanitation problems in Africa.

We, are determined that our Governments, non-governmental organisations, civil society and the private sector extend full support to the implementation goals of the NEPAD. In this regard, we declare that we shall focus our efforts on:

a) Governance of the water sector

Strengthening policy, legislative and institutional reforms, including decentralisation and empowerment of local community for integrated water resources management.

b) Intergovernmental policy dialogue for water security

Embarking on a process of building an African Regional Ministerial Forum for Water for the purpose of strengthening our efforts on the governance of water resources on the continent including ensuring co-ordination, direction, strategic approaches to freshwater related initiatives in the continent. Such an alliance aims,

among other things, at dramatically improving the integrated management of transboundary water resources, and using co-operation on water (including river basin management) as a basis for bringing nations together.

c) Financing for the development of the water sector

Mobilising domestic resources to address the water management challenges and also undertake the creation of conditions that would be conducive for attracting investment and further call for massive investments in the water and sanitation sector.

d) Building capacities for the management of the water sector

Implementing sustained capacity building programmes to ensure effective planning and utilisation of all relevant resources in the water and sanitation sector.

e) Transferring appropriate technology

Encouraging, through strategic partnerships with the private sector and others, to develop environmentally sound technology, which is effective, user friendly, appropriate to the African environments and affordable.

f) Meeting the water needs of our urbanising centres

Undertaking the enhancement of all aspects of water management in our urban centres, particularly in the areas of water demand management, awareness raising, prevention and control of pollution arising from land-based activities.

g) Guaranteeing adequate water, sanitation and hygiene services

Undertaking drastic measures to improve water, sanitation and hygienic conditions for all our peoples, particular in the peri-urban and rural areas.

h) Strengthening the role of women in the management of our water resources and the provision of adequate sanitation services

Undertaking the necessary measures for the mainstreaming of gender considerations in decision making processes relating to water issues.

International solidarity

In adopting the Millennium Declaration, in 2000, the world's Heads of State and Government identified a number of values, including tolerance and solidarity. We shall therefore, count on that new culture of international solidarity in tackling the concerns highlighted in this statement. It is our hope that future international support will be proportionate to the gravity and magnitude of the water and sanitation problems in Africa. We recall the agreed United Nations target for official development assistance of 0.7 per cent of Gross Domestic Product (GDP). Developed countries, which have not yet reached the target should exert their best efforts to do so.

Through this statement, we call for a regional and global alliance for water security for all in Africa as a key to poverty alleviation and sustainable livelihoods.

Follow up on the Bonn Conference

In order to encourage systematic intergovernmental dialogue in the water and sanitation crisis facing our region and, equally important, in response to the challenges relating to the NEPAD, we have resolved to institutionalise ministerial level policy dialogue on water issues. To this end, we shall establish an African Ministerial Conference on Water. We shall convene the inaugural meeting of the fifty-three African Ministers in charge of water in March/April 2002.

We express our appreciation to the Federal Government of Nigeria for its gracious offer to host

this meeting in Abuja. We also call on our regional institutions as well as our co-operation partners (including UNEP, UNCHS, World Bank, African Development Bank UNESCO, and others) to extend the necessary support for the convening of this meeting. Such a Ministerial forum will enable our region to facilitate the development of common perspectives and positions on the agenda items of major international conferences.

In conclusion, on behalf of our Governments, we convey to the people and the Government of the Federal Republic of Germany our profound gratitude for the hospitality extended to us. We also congratulate them for the successful convening and fruitful outcome of the International Conference on Freshwater (Bonn December 2001).

*Angola
Benin
Cameroon
Côte d'Ivoire
Democratic Republic of Congo
Djibouti
Egypt
Gambia
Ghana
Guinea-Bissau
Lesotho*

*Malawi
Mali
Mauritius
Mozambique
Nigeria
Senegal
South Africa
Sudan
Tanzania
Togo
Uganda*



Water is life!

IV. ATTACHMENTS

List of Participants

NATIONAL GOVERNMENTS

Name	Lastname	Position	Institution
ALGERIA			
Abdelmadjid	Demmak	Directeur des Etudes et Aménagement Hydraulique	Ministère des Ressources en Eau
ANGOLA			
Rui Augusto	Tito	Vice Minister	Ministry of Energy and Water Affairs
Kianu	Vangu	Head	Department of Control and Licencing, Ministry of Energy and Water Affairs
Pierre	Kiala	Director	International Co-operation Department, Ministry of Energy and Water Affairs
Abel	Fonseca		Ministry of Foreign Affairs
Antonio Miguel	Conçalves		Ministry of Foreign Affairs
ARGENTINA			
Rolando A.	Burgener	Consejero	Embajada de la República Argentina en Alemania
AUSTRALIA			
Uma	Jatkar	Third Secretary	Embassy of Australia in Germany
AUSTRIA			
Wilhelm	Molterer	Federal Minister	Ministry for Agriculture, Forestry, Environment and Water Management
Wolfgang	Stalzer	Director General	Ministry for Agriculture, Forestry, Environment and Water Management
Manfred M.	Schneider	Head of Department	Ministry for Agriculture, Forestry, Environment and Water Management
Gerald	Eder	Consultant	Ministry for Foreign Affairs
Helmut	Jung	Consultant	Ministry for Foreign Affairs
Markus	Reiterer		Ministry for Foreign Affairs
AZERBAIJAN			
Elchin	Gambarov	Director	Research Institute of Water Problems, Cabinet of the Republic of Azerbaijan
BANGLADESH			
Giasuddin Ahmed	Choudhury	Chief Planning BWDB	Ministry of Water Resources
BELGIUM			
Eddy	Boutmans		Secretary of State for Development Co-operation
Renata	Vandeputte	Advisor	General Direction for International Co-operation, Ministry of Foreign Affairs
Bernard	Crabbé	Advisor	Secretary of State for Development Co-operation
Fabienne	Vanderstraeten	Legal Adviser	Flemish Ministry, Europe and Environmental Division
Barbara	Desmet	Logistic Coordinator	Belgian Presidency of the European Union
Rik	De Baere	Deputy Head of Cabinet	Cabinet of the Flemish Minister of Environment
Patrik	Van Bockstael	Advisor	Cabinet of the Flemish Minister of Environment
Jean	Pauwels	Advisor	Flemish Environment Agency
Godielieve	Dillen		Flemish Ministry, Europe and Environmental Division
BENIN			
Kamarou	Fassassi	Ministre	Ministère des Mines, de l'Energie et de l'Hydraulique (MMEH)
Luc-Marie	Gnacadjá	Ministre	Ministère de l'Environnement, de l'Habitat et de l'Urbanisme (MEHU)
Rogatien	Biaou	Secrétaire Général	Ministère des Affaires Etrangères et de l'Intégration Africaine (MAEC)

Name	Lastname	Position	Institution
André	Toupé	Directeur de l'Hydraulique	Ministère des Mines, de l'Energie et de l'Hydraulique(MMEH)
Paul	Douarkoutche	Conseiller Technique	Ministère des Mines, de l'Energie et de l'Hydraulique (MMEH)
Félix	Azonsi	Chef du Département des Ressources en Eau	Ministère des Mines, de l'Energie et de l'Hydraulique (MMEH)
Issa	Kpara		Ministère des Affaires Etrangères et de l'Intégration Africaine (MAEC)

BOLIVIA

Ingrid	Zavala-Castro	Counselor	Embassy of the Republic of Bolivia to the Federal Republic of Germany
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BRAZIL

Raymundo J.	Santos Garrido	Secretary General	Hidrological Resources Secretariat Ministry of Environment
M. G.	Valente da Costa	Counselor	Environment Division (DEMA), Ministry of External Relations

BRUNEI DARUSSALAM

Haji Mohd	Salleh Haji	Director of Water Services	Ministry of Development
Rahman	Abu Bakar	Engineer	Ministry of Development

BURKINA FASO

Abel	Tigasse	Directeur Général de l'Hydraulique	Ministère de l'Environnement et de l'Eau
Jérôme	Thiombiano	Chef du Programme GIRE	Ministère de l'Environnement et de l'Eau

BURUNDI

Prudence	Kwizera	Directeur des Ressources Hydrauliques	Ministère de l'Energie et des Mines
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CAMBODIA

Y Ky	Heang	Secretary of State	Ministry of Water Resources and Meteorology
Huy	Kanthoul Vora	Secretary of State	Ministry of Rural Development
Tara	Theng	Director Department of Water Resources Management	Ministry of Water Resources and Meteorology
Khun	Ngeth	Deputy General Director of Technical Affairs	Ministry of Rural Development

CAMEROON

Jacques Yves	Mbelle Ndoe	Ministre	Ministère des Mines, de l'Eau et de l'Energie
Janvier	Alo'o Obiang	Directeur de l'Eau et de l'Assainissement Urbain	Ministère des Mines, de l'Eau et de l'Energie
Jean-Pierre	Bidjocka	Sous-Directeur des Adductions d'Eau	Ministère des Mines, de l'Eau et de l'Energie
Marc Antoine	Batha	Diplomate	Ministère des Relations Exterieures
Claude	Kemayou	Manager of Water Supply Conservation	Société Nationale des Eaux

CANADA

Jennifer	Moore	Head of Sub-Department	Ecosystems and Environmental Resources Directorate Environment Conservation Services Environment Canada
Philip	Baker	Director	Canadian International Development Agency
Matthew	Levin	Director	Department for International Co-operation for Environmental Protection, Ministry of Foreign Affairs
Aly	Shady	Water Expert	Canadian International Development Agency
Jason	Thomson	Policy Advisor	Department for Ecosystems and Natural Resource Environment Canada
Steve	Cobham	Policy Analyst	Industry Development Office, Industry Canada
Jérôme	Faivre	Conseiller	Ministère de l'Environnement, Gouvernement du Quebec
Sabrina	Barker		Environment Canada

CHILE

Pablo	Jaeger	Fiscal de la Dirección General de Aguas	Ministerio de Obras Públicas
José	Fernández Barahona	Cónsul	Embajada de Chile en Alemania

Name	Lastname	Position	Institution
CHINA			
Chen	Lei	Vice Minister	Ministry of Water Resources
Xu	Erwen	Counsellor	Department of International Organisations and Conferences Ministry of Foreign Affairs
Wu	Jisong	Director General	Department of Water Resources Ministry of Water Resources
Li	Daixin	Deputy Director General	Department of Planning and Programming Ministry of Water Resources
Liu	Jianming	Deputy Director	General Department of International Co-operation Ministry of Water Resources
Zhang	Zhitong	Deputy Director	General Office Ministry of Water Resources
Guan	Yexiang	Division Chief	Department of Planning and Programming Ministry of Water Resources
Liu	Zhiguang	Division Chief	Department of International Co-operation Ministry of Water Resources
Wu	Zhenpeng	Division Chief	Department of Agriculture Ministry of Finance
Guan	Xifan	Deputy Division Chief	Department of Agriculture State Development Planning Commission
Qi	Tian	Deputy Division Chief	Department of Water Resources Ministry of Water Resources
Yang	Xiaoliu	CHINATAC Chair	China Institute of Water Resources and Hydropower Research
Wang	Zhiliang	Assistance Professor	North-China Water Conservancy and Hydroelectric Power Institute
Hao	Zhao	Project Officer	Department of International Co-operation Ministry of Water Resources
Wu	Wenqing	Engineer	Ministry of Water Resources
Tu	Shuming	Deputy Chief	Water Resources Press Ministry of Water Resources
Cui	Chenggen	First Secretary	Embassy of China in Germany

COLOMBIA

Claudia	Martinez Zuleta	Vice Ministra	Ministerio del Medio Ambiente
Victoria Eugenia	Senior Pava	Cónsul General	Consulado General Embajada de Colombia en Alemania

COMOROS

Mohamed Ali	Hadji	Ingénieur Hydraulique	Ministère des Affaires Etrangères et de la Co-operation
Ahmed Said	Othmans	Head	Water Department Ministère des Affaires Etrangères et de la Co-operation

CONGO

Jean Marie	Tassoua	Ministre	Ministère de l'Energie et de l'Hydraulique
Jean Michel	Ossete	Directeur Général de l'Hydraulique	Ministère de l'Energie et de l'Hydraulique
Barnabé	Dihoulou	Deuxième Conseiller	Ambassade du Congo en Allemagne
Samson	Kondo Guy		Ministère de l'Energie et de l'Hydraulique

COSTA RICA

José Miguel	Zeledón Calderón	Jefe del Departamento de Aguas	Ministerio del Ambiente y Energía
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COTE D'IVOIRE

Angele	Boka Agoussi	Ministre	Ministère des Eaux et Forêts
Dubois E. F.	Djamat		Ministère des Eaux et Forêts

CROATIA

Dragutin	Geres	Advisor in Croatian Waters	Institute of Water Management
Mojca	Luksic	Advisor	State Water Directorate

CYPRUS

Nicos	Stylianou	Chief Water Engineer	Water Development Department Ministry of Agriculture, Natural Resources and Environment
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CZECH REPUBLIC

Jaroslav	Kinkor	Director	Water Protection Department Ministry of Environment
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DEMOCRATIC REPUBLIC OF THE CONGO

Pierra	Makoyo Kalonda	Chargé des Questions Techniques	REGIDESO
Alain	Kinkela Pingila	Chef de Services chargé de la Qualité de l'Eau en Milieux Urbains	Communauté Urbaine et Rurale du Congo
Charles	Mbuyi Wa Mpoyi	Conseiller chargé de l'Eau	Ministère de l'Energie

Name	Lastname	Position	Institution
DENMARK			
Dan	Nielsen	Ambassador	Ministry of Foreign Affairs
Peter	Branner	Ambassador	Secretariat for Environment and Sustainable Development Ministry of Foreign Affairs
Palle	Lindgaard-Jørgensen	Head of Department	Danish Environmental Protection Agency Ministry of Environment and Energy
Mogens	Bregnbæk	Chief Technical Adviser	Ministry of Foreign Affairs
Kurt	Mörck Jensen	Senior Technical Adviser	Ministry of Foreign Affairs
Jakob	Vinding Madsen	Head of Section	Secretariat for Environment and Sustainable Development Ministry of Foreign Affairs
Carsten	Møberg Larsen	Head of Section	Danish Environmental Protection Agency Ministry of Environment and Energy
DJIBOUTI			
Dini Abdallah	Billis	Ministre	Ministère de l'Agriculture, de l'Elevage et de la Mer
Abdoulkader	Kamil	Directeur Général	Office National des Eaux de Djibouti (ONED)
Ali	Gamal-Eldin	Chef du Département Hydrogéologique	Office National des Eaux de Djibouti (ONED)
DOMINICAN REPUBLIC			
César	Herrera Díaz	Counselor	Embassy of the Dominican Republic in Germany
EGYPT			
Mahmoud	Abu-Zeid	Minister	Ministry of Water Resources and Irrigation
Hesham Mohamed	Kandil	Director for Technology and Information	Minister's Office, Ministry of Water Resources and Irrigation
Hassan Wahby	M. Ali	Director	Water Management Research Institute, Ministry of Water Resources and Irrigation
EI SALVADOR			
Nelson	Cuellar		Programa Salvadoreño de Investigación sobre Desarrollo y Medio Ambiente (PRISMA)
ERITREA			
Ghebremicael	Hagos	Director General	Water Resources Department Ministry of Land, Water and Environment
ESTONIA			
Harry	Liiv	Deputy Secretary General	Ministry of the Environment
ETHIOPIA			
Yohannes Ghebremedhen Redda		Head	Water Supply and Sanitation Department, Ministry of Water Resources
FINLAND			
Kalevi	Hemilä	Minister	Ministry of Agriculture and Forestry
Kari	Karanko	Director	Ministry for Foreign Affairs
Pekka	Jalkanen	Director General	Ministry of the Environment
Leif	Fagernäs	Ambassador	Embassy of the Republic of Finland in Germany
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Kai	Kaatra	Director	Ministry of Agriculture and Forestry
Risto	Timonen	Counsellor	Ministry of Agriculture and Forestry
Jyryk	Nissilä	Second Secretary	Embassy of the Republic of Finland in Germany
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FRANCE			
Francis	Stephan	Sous-Directeur de la Coopération Technique et du Développement	Ministère des Affaires Etrangères
Francois	Casal	Directeur adjoint	Direction de l'Eau, Ministère de l'Aménagement du Territoire et de l'Environnement (MATE)
Jean-Paul	Rivaud	Chargé de Mission	Direction de l'Eau, Ministère de l'Aménagement du Territoire et de l'Environnement (MATE)
Philippe	Guettier		Ministère de l'Aménagement du Territoire et de l'Environnement (MATE)
Gilles	Neveu	Directeur de l'Innovation	Office International de l'Eau
Jean-Luis	Blanc		SUEZ
Marcel	Jouve	Rédacteur	Sous-direction de l'Environnement Ministère des Affaires Etrangères

Name	Lastname	Position	Institution
GAMBIA			
Momodou	Njie	Principal Assistant Secretary	DOS Fisheries, Natural Resources and Environment
GEORGIA			
Zaal	Lomtadze	Deputy Minister	Ministry of Environment and Natural Resources Protection
GERMANY			
Heidemarie	Wieczorek-Zeul	Federal Minister	Federal Ministry for Economic Co-operation and Development (BMZ)
Jürgen	Trittin	Federal Minister	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Uschi	Eid	Parliamentary State Secretary	Federal Ministry for Economic Co-operation and Development (BMZ)
Uwe	Thomas	State Secretary	Federal Ministry of Education and Research (BMBF)
Bärbel	Dieckmann	Mayor	City of Bonn
Pia	Heckes	Deputy Mayor	City of Bonn
Peter	Ammon	Head of the Economic Department	Federal Foreign Office (AA)
Fritz	Holzwarth	Deputy Director General	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Hans-Peter	Schipulle	Deputy Director General	Federal Ministry for Economic Co-operation and Development (BMZ)
Dagmara	Berbalk	Head of Division	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Manfred	Konukiewitz	Head of Division	Federal Ministry for Economic Co-operation and Development (BMZ)
Harald	Ganns	Ambassador a.D.	U.N. Organisations Affairs Division, Federal Foreign Office (AA)
Herbert	Sahlmann	Head of Division	Federal Ministry for Economic Co-operation and Development (BMZ)
Eiko	Lübbe	Head of Division	Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL)
Jürgen	Heidborn	Head of Division	Federal Ministry of Education and Research (BMBF)
J.	Blasius	Head of Division	Federal Ministry of Health (BMG)
Karl-Heinz	Wittek		Federal Foreign Office (AA)
Stephan	Ohme	Head of Division	Federal Ministry for Economic Co-operation and Development (BMZ)
Ute	Baumgärtel	Head of Protocol	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Angelika	Sülzen	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Niels	Breyer	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Hanno	Spitzer	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Franca	Schwarz	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Martin	Waldhausen	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Birgit	Schwenk	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Anja	von Rosenstiel	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Elfriede	Ariza y Ramos	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Gregor	Kappenstein	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Volker	Mohaupt	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Reinhard	Schneider	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Hildegard	Kaiser	Adviser	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)
Sibylle	Tepper	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Steffen	Heizmann	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Johann	Bäumler	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Kirsten	Döle	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
Santiago	Alonso-Rodriguez	Adviser	Federal Ministry for Economic Co-operation and Development (BMZ)
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Peter	Fuhrmann	Director General	Ministry for the Environment, Federal State Baden-Württemberg
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Name	Lastname	Position	Institution
GHANA			
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GREECE			
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Theodore	Christopoulos	General Secretary	Ministry for Development
Panayotis	Karakatsoulis	Professor	University of Athens
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Eleftherios	Stavrinou	Head of Section	Ministry of Agriculture
Leonidas	Rokanas	Consul General	Consular Office of Greece in Germany
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GUINEA-BISSAU			
Julio	Mamadú Baldé	Ministre	Ministère des Ressources Naturelles et Energie
Marie-Agnes	Toure	Counselor	Embassy of Guinea in Germany
HAITI			
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Thomas Franck	Elize	Directeur Technique	Centrale Autonome Metropolitaine d'Eau Potable (CAMEP)
Yolande	Paultre Sajours	Coordonnateur National	L'Unité de Reform du Secteur de l'Eaux Potable (URSEP)
Adrien	Fritz	Coordonnateur	Organismes Autonomes, Ministère des Travaux Publics, Transports et Communications
HOLY SEE			
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HUNGARY			
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Imre P.	Lánszki	Head of Minister's Cabinet	Ministry for the Environment
Kálmán	Papp	Director	EU and International Coordination Office, National Water Authority
László	Döbörhegyi	Counsellor	Embassy of Hungary in Germany
ICELAND			
Gunnar	Steinn Jónsson	Head of Department of Food Control and Environmental Protection	Ministry of Environment
INDIA			
Arjun	Charan Sethi	Minister	Ministry of Water Resources
B. N.	Nawalawala	Secretary	Ministry of Water Resources
Ronen	Sen	Ambassador	Embassy of India in Germany
D. K.	Chaddha	Chairman	Central Ground Water Board, Ministry of Water Resources
A.	Meena	Private Secretary to H.E. The Minister	Ministry of Water Resources
Ratnasamy	Jayseelan	Member	Design and Research, Central Water Commission, Ministry of Water Resources
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INDONESIA			
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IRAN			
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Name	Lastname	Position	Institution
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IRAQ

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ISRAEL

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Asaf	Doron		Ministry of the Environment
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ITALY

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Franco	Cozza		Ministry of Agriculture and Forestry
Filippo	Alessi		Ministry of Foreign Affairs
Tommaso	Bellei		Ministry of Foreign Affairs
Guilietta	Calistri	Expert International Environment	Ministry of the Environment
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JAPAN

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Name	Lastname	Position	Institution
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KENYA			
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KUWAIT			
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LAO PEOPLE'S DEMOCRATIC REPUBLIC			
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LESOTHO			
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LIBYAN ARAB JAMAHIRIYA			
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LITHUANIA			
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LUXEMBOURG			
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MADAGASCAR			
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MALAWI			
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MALAYSIA			
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MALI			
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Name	Lastname	Position	Institution
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MAURITIUS			
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MEXICO			
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MOROCCO			
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MOZAMBIQUE			
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MYANMAR			
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NAMIBIA			
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NEPAL			
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NETHERLANDS			
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Name	Lastname	Position	Institution
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NICARAGUA			
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NIGERIA			
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Abdu Haro	Mashi	Member of the House Committee	Federal Ministry of Water Resources
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OMAN			
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PAKISTAN			
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PARAGUAY			
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Nimia	da Silva Boschert	Primera Secretaria	Embajada de Paraguay en Alemania
POLAND			
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PORTUGAL			
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Name	Lastname	Position	Institution
REPUBLIC OF KOREA			
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RUSSIAN FEDERATION			
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SAINT LUCIA			
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Debra	Bushell		Ministry for Communications, Works, Transport and Public Utilities
SAMOA			
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SAUDI ARABIA			
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Ahmad	Al-Zahrani	Geologist	Ministry of Agriculture and Water
SENEGAL			
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Madio	Fall	Director	Ministry of Mines, Energy and Hydraulics
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SIERRA LEONE			
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SLOVAKIA			
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SLOVENIA			
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SOUTH AFRICA			
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Kader	Asmal	Minister	Ministry of Education
Mike	Muller	Director General	Ministry of Water Affairs and Forestry
Andrew	Magadagela	Deputy Director	Ministry of Water Affairs and Forestry
Elias L.	Potloane	Deputy Director General	Water Services and Regional Operation, Ministry of Water Affairs and Forestry
Reginald	Tekateka	Permanent Representative	Lesotho Highlands Water Commission, Ministry of Water Affairs and Forestry
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Name	Lastname	Position	Institution
SPAIN			
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Ramón	Alvarez Maqueda	Jefe de Área	Ministerio del Medio Ambiente
SRI LANKA			
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SUDAN			
Kamal Ali	Mohamed	Minister	Ministry of Irrigation and Water Resources
SWEDEN			
Kjell	Larsson	Minister	Ministry of Environment and Natural Resources
Lars-Göran	Engfeldt	Ambassador	Ministry of Environment
Anders	Berntell	Head of Section	Ministry of Environment
Andreas	Ershammar	Head of Section	Ministry for Foreign Affairs
Bengt	Johansson	Director	Swedish International Development Co-operation Agency (SIDA)
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SWITZERLAND			
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SYRIAN ARAB REPUBLIC			
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TAJIKISTAN			
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THAILAND			
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THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA			
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TOGO			
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TRINIDAD AND TOBAGO			
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TUNISIA			
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TURKEY			
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UGANDA			
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UKRAINE			
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UNITED ARAB EMIRATES			
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UNITED KINGDOM			
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UNITED REPUBLIC OF TANZANIA			
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Richard	Ives		USBR
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UZBEKISTAN

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VENEZUELA

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YEMEN

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ZAMBIA

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UN ORGANISATIONS

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UNCHS			
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UN - DESA			
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UNDP			
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UNED-Forum			
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UNEP			
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THE WORLD BANK

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WORLD WATER COUNCIL (WWC)

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CHILDREN AND YOUTH

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INDIGENOUS PEOPLE

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NGOs

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LOCAL AUTHORITIES

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WORKERS AND TRADE UNIONS

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BUSINESS AND INDUSTRY

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SCIENCE AND TECHNOLOGY

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FARMERS

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The International Steering Committee

The International Steering Committee was set up to advise the Conveners in all organisational and content-related matters in the course of Conference preparation.

The Steering Committee consists of representatives from national Governments, UN Organisations, International Organisations and representatives of Major Groups, and ensures that specific regional and sector views and experiences are considered during the preparation phase. The first meeting of the Steering Committee took place on 10/11 October 2000, the second on 29/30 March 2001, and the third on 4/5 October 2001.

Dagmara Berbalk, Co-Chair, Federal Ministry for Environment, Nature Protection and Nuclear Safety, Germany

Arthur Askew, World Meteorological Organisation, Switzerland

Peyman Badiei, Water Resources Management Organisation, Iran

Anders Bertell, Ministry of the Environment, Sweden

Rogatien Biau, Ministry of Foreign Affairs and African Integration, Benin

Vivianne Blanlot Soza, National Energy Commission, Chile

Helmut Blöch, European Commission, Directorate General Environment, Belgium

Muhamad A. K. Abubakar, Federal Ministry of Water Resources, Nigeria

Aizaz Ahmad Chaudry, Permanent Mission of Pakistan to the United Nations, Pakistan

Manuel Contijoch, Ministry of Agriculture, Mexico

Ian Curtis, Department for International Development, United Kingdom

Bob Dekker, Ministry of Transport, Public Works and Water Management, Netherlands

Manuel Dengo, UN Department for Economic and Social Affairs, United States of America

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Victor Dukhovny, Interstate Coordination Water Commission, Uzbekistan

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Gordon Young, UN Educational, Scientific and Cultural Organisation – World Water Assessment Programme, France



International Steering Committee, 2nd meeting, Potsdam, 29 and 30 March 2001.

The Organising Committee

The Organising Committee includes representatives of the Federal Ministry for Economic Co-operation and Development (BMZ), the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), the Foreign Office (AA), the City of Bonn and of the Conference Secretariat. The Centre for International Co-operation (CIC) supported the Organising Committee in organisational matters.

Chair: Franz-Josef Batz



*From left to right:
Dagmara Berbalk, Tania Rödiger-Vorwerk,
Elfi Ariza y Ramos, Franz-Josef Batz,
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*Not pictured:
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Roland Holländer, Volker Mohaupt, Franca Schwarz,
Karl-Heinz Wittek, Elisabeth Zaun*

The Conference Secretariat

The Conference Secretariat is provided by Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. The Secretariat supports the Organising Committee in all matters related to the preparation and implementation of the Conference.

Head: Franz-Josef Batz



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