

**AFRICA WATER RESOURCES
MANAGEMENT POLICY CONFERENCE:
A REPORT ON OUTCOMES AND IMPACT**

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I. BACKGROUND

Improving the management of water resources is a priority in Africa, a region facing unique and complex management challenges. Africa has a legacy of extreme rainfall variability, resulting in endemic drought and occasional floods, and over 50 international river basins, with complex water rights issues that could potentially escalate to conflict. In addition, there is very low coverage of the urban and rural poor with reliable water and sanitation services, coupled with rapidly growing and urbanizing populations. Water demand for industries, for generation of hydropower and irrigation development is also growing. There is also heavy dependence on extensive agriculture, with low water use efficiency and poor land management, leading to degraded watersheds and deteriorating water quality. Further, inadequately treated wastewater discharged from industries, urban sewerage systems, and mining operations, and agro-chemical runoff is contaminating water supplies and degrading aquatic ecosystems. Increasing water scarcity and mis-management of water resources have resulted in conflicts among but also between sectoral users of water and between riparian States.

Many nations, however, have begun to take actions to address these challenges and are undertaking systematic water sector reforms and implementing comprehensive water resources management policies and strategies, with improved water regulation and pricing and stakeholder participation and greater attention to environmental sustainability considerations. However, the recent reforms often entail difficult tradeoffs, policy decision, new institutional arrangements and greater cross-sectoral coordination. There are important lessons to be learned from such experiences.

The Africa Water Resources Management Policy Conference: Sharing Knowledge to Manage Africa's Fragile Water Resources in the 21st Century was held at the UNEP Headquarters in Nairobi, Kenya from May 26-28th, 1999. The Africa Water Resources Policy Conference (the Conference) Objectives were to:

- *Provide a forum for senior policy- and decision-makers from various African countries to share – and draw lessons from – their experiences in water resources management policy and institutional reforms*
- *Promote the development of a community of African water resources professionals and define a program of short-term actions for the management and exchange of water resources knowledge*
- *Contribute to the definition of a long-term African Vision for Water*

Conference participants were senior water resources officials and specialists from 24 African, including, Burkina Faso, Côte d'Ivoire, Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Lesotho, Mali, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Republic of South Africa, Rwanda, Senegal, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe. The World Bank and the Government of Kenya, in cooperation with the United Nation's Environment Programme (UNEP) as part of the Global Water Partnership (GWP), organized and sponsored this ministerial conference with funding from the Governments of Germany, Sweden, UK, USA, the Netherlands, and Switzerland. USAID/RCSA also supported 29 participants with country teams from Lesotho, Namibia, Zambia, Zimbabwe, SADC-ELMS, and SADC-WSCU. The proceedings from the conference have yet to be released.

II. CONFERENCE AGENDA

DAY 1--MORNING PLENARY: AFRICAN WATER RESOURCES CHALLENGES

The plenary session on the first day comprised keynote addresses and introductory presentations. The main objectives of these presentations were to share knowledge about existing and emerging African water resources management challenges and experiences on water resources policy and institutional reforms. The keynote addresses were:

- Welcome (UNEP)
- Objectives *Dr. Rafik Hirji/Mr. Francois-Marie Patomi (World Bank)*
- Kenyan Opening
- Overview of African Water Resources Challenges (K.Y. Amoake)
- Climate Variability & Climate Change: What this means for Droughts & Floods in Africa (*Dr. Robert Watson, World Bank*)
- Environmental and Water Resources Management: Emerging Challenges — *Hon. Minister Moriyane Moleleki, Lesotho*
- Enhancing Participation in Water Resources Planning & Management Decision Making — *Hon. Minister Mussa Nkhangaa, Tanzania*
- Financing Water Resources Management: Options and Lessons — *Mr. Sekou Toure, Cote d'Ivoire*
- UNEP Keynote— (*Mr. Klaus Topfer, UNEP*)
- Partnerships for Managing African Water Resources—(*Prof. Albert Wright, Global Water Partnership*)

DAY 1--AFTERNOON PLENARY: NATIONAL WATER RESOURCES POLICY REFORMS

The second set of plenary session presentations comprised selected cases of national water resources management policy and institutional reforms. Reform elements include: achieving financial autonomy of water resources management; planning on the basis of river basins; cross-sectoral planning and coordination; internalizing environmental demands of water and water quality management; and participation of primary stakeholders in decision making. The main objectives of each presentation was to share specific experiences candidly about the formulation of national water resources management policies; each addressed both the process (including the consultative aspects) of policy formulation and the substance of individual country policies. Each discussed the social, political, and economic challenges involved in the development of integrated water resources management policies and described the selection and application of appropriate economic, regulatory, and participatory instruments.

Cases from Western Africa

- Reconciling Regulations, Economics & Participation for Managing Water Resources in Ghana, *Dr. Kwaku Osafu, Ghana.*
- Water Resources Management Strategy Development in Nigeria, *Engr. Mustapha Bukar, Nigeria*
- Water Resources Management Policy and Strategy Development in Senegal, *Ms. Astou Faye Fall, Senegal*

Cases from Southern Africa

- Water Policy Reforms in South Africa: A Consultative Process *Mr. Tari Sokotu, South Africa*
- Addressing Historically Skewed Water Rights Arrangements: Water Resources Management Strategy Development in Zimbabwe, *Mr. Simon Pazvakavumba, Zimbabwe*
- Water Resources Management Strategy in Namibia, *Mr. Samuel Gogoseb, Namibia*

DAY 2--MORNING

Cases from Eastern Africa

- Water Policy Development and Implementation in Kenya
- Water Resources Management Strategy of Tanzania: A Phased Approach *Mr. Meraji Msuya, Tanzania*
- Water Resources Policy/Strategy Development in Ethiopia, *Ato Sable Sissay, Ethiopia*

DAY 2— MORNING (AFTER TEABREAK) PARALLEL SESSIONS: EXPERIENCES IN KEY POLICY ISSUES

The third day comprised four parallel sessions. The objective was to have in-depth networking and debate, with full involvement of all participants, on selected topics of water policy reforms as well as on capacity building needs to address the respective management topics. The parallel sessions were: (a) economics and financing of water resources management, (b) water resources legislation and regulation: customary and statutory law and practice, (c) water resources institutions: emerging and innovative arrangements; and (d) environmental aspects of water resources management: water pollution control, water weed and hyacinth control, and environmental impact assessment. Chairpersons guided the session discussions and together with rapporteurs distilled the conclusions on key issues, existing capacity constraints to address the issues, and specific recommendations, and presented to the plenary session on the final day.

1A: ECONOMICS AND FINANCING OF WATER RESOURCES MANAGEMENT

Chair: Dr. Rashid Hassan, Pretoria

The main objective of session 1A was to stimulate discussion on the economic dimensions of water resources management and the financing of the water management activities. Economic issues including opportunity cost pricing and full cost recovery (including cost of recovering capital investments, operation and maintenance, and administration of management activities) were considered. A key goal was to discuss ways of balancing the social, economic and environmental costs and benefits as well as for achieving financial autonomy for water resources management activities. Financing options included user charges for raw water, fees for licensing and allocating water rights, government subsidies for particular sectors or as safety nets for the poor, incentives for upstream stewardship (for watershed protection, for example), pollution and other non-compliance penalties, water tariffs, etc.

Economics of Water Resources

- Economics of Water Resources: Key Issues and Challenges, *Dr. Kassim Kulimchea, Tanzania*
- Restoring Downstream Social and Environmental Benefits: Economics of Artificial Floods on the Senegal River Basin, *Mr. Babaly Deme, Senegal*

Financial issues in Water Resources Management

- Raw Water Pricing: Options and Implications for Zimbabwe
Dr. Peter Robinson, Zimbabwe
- Umgeni Watershed Management: Economics and Financing Issues

1B: REGULATION: STATUTORY AND CUSTOMARY LAW AND PRACTICE

Chair: Mr. Caroli Omondi Ochola, Kenya

Session 1B explored the regulatory dimensions (customs, law, and regulation), the 'enabling environment', of water resources management. Cases of national legislation were examined to evaluate the sufficiency of existing laws and regulations and the effectiveness of their enforcement. Existing water rights arrangements (based on both statutory and customary practice) were examined. Attention was paid to conflict and conflict resolution mechanisms under the existing arrangements. Water regulation covered land use rights related to water management, watershed development, environmental quality and pollution standards, dam safety standards, service standards for water supply, and financial management standards. Consideration was also given to customary laws and practices, to their relevance to present day water resources management, and to strategies for institutionalizing them where appropriate.

Statutory Water Law: Adequacy and Enforceability

- Mozambique Water Resources Legislation: Progress & Update, *Mr. Montero Carlos, Mozambique*
- Nigeria Water Resources Decree 101 and Draft Regulations: Adequacy and Enforceability for Sustainable Water Resources Management, *Mrs. P.I. Njokanna, Nigeria*

Customary Law and Community Water Management Practice

- African Customary Water Law: An Overview, *Prof. Okoth Ogenia, Kenya*
- Water User Associations: Regulatory Framework for African Practice, *Mr. Salman Salman, World Bank*

1C: INSTITUTIONS: EMERGING AND INNOVATIVE ARRANGEMENTS

Chair: Mr. Tami Sokotu, South Africa

Session 1C explored the principles underlying the roles and responsibilities of water resources management organizations, including apex agencies such as a Water Resources Commission or a National Water Resources Authority, and River Basin or catchment organizations. Functions examined included: (a) planning and coordination, (b) design and construction, (c) regulation, (d) social and environmental action, and (e) operations. Appropriate linkages (administrative, legal and financial) between apex or river basin organizations with sub-sector agencies, district organizations, community groups, the private sector and NGOs were explored. Short introductory presentations discussed lessons from case studies of long-term institutional arrangements for water resources management within particular political, socio-economic and institutional context. Appropriate stakeholder representation on river basin and utility boards and institutional mechanisms for fostering cross-sectoral coordination were explored. A further issue considered was institutional and financing solutions for participatory management of watersheds at community level, building upon traditional practices and institutions and integrating this into river basin management.

National Water Authorities

- Zimbabwe National Water Authority: Legislative Arrangements and Financing for Catchment Boards, *Mr. Zeb Murungweni, Zimbabwe*
- Ghana Water Resources Commission: Mandate and Financing, *Prof. Dzom-Adzobu, Ghana*

Participatory River Basin & Community Water Resources Management

- Pangani and Rufiji River Basin Board: Participation and Financing, *Mr. Washington Mutayoba, Tanzania*
- Drought Preparedness and Management in Arid Lands: Community Management Cased Study, *Mahbub Maalim, Kenya*
- Community Based Water Resources Management: Case Study from Zimbabwe, *Ms. Mukami Kariuki, World Bank*

1D: ENVIRONMENTAL ASPECTS OF WATER MANAGEMENT

Chair: Mr. Peter Aquah, Ghana

Session 1D explored environmental aspects of water resources management, such as water pollution control, water weed and hyacinth control, and environmental impact assessment. Point and non point source water pollution is an emerging problem in the region, and technology-based, regulatory and market-based instruments for water pollution control were explored. The extremely serious issue of water weed and water hyacinth proliferation in water courses also was explored and alternative options for their control discussed. Short introductory presentations described case studies of water quality management and pollution control strategies and also case studies of the social and economic consequence of water hyacinth invasion and alternative strategies for, and experiences of, its control.

Water Pollution Control

- Water Quality Management: Design, Financing and Sustainability Considerations, *Dr. Edwin Ongley, Canada.*

Environmental Impact Assessment

- EIA Principles & Practice: Legislative Requirements and Administrative Arrangements, *Prof. Mwachysi, Tanzania*
- Case Study of EIA Implementation in Hydropower Projects, *Mr. Achim Tembo, Zambia*

Water Weed And Hyacinth Control

- Physical, Chemical and Biological Options for Controlling Water Weeds and Hyacinth, *Dr. Tim Twongo, Uganda*
- Water Weeds and Hyacinth Management in Western Africa, *Mr. Kweku Amoaka Atta de Graft-Johnson, Ghana*
- Participatory Water Weeds and Hyacinth Management, *Mr. Roy Jones, South Africa*

DAY 3: PLENARY - SHARING KNOWLEDGE AND STRENGTHENING CAPACITY

The plenary session on the fourth and final day focused on the theme of knowledge sharing and capacity enhancement, with a strong emphasis on inter-African networking and information

exchange. Parallel group reports were presented and discussed, followed by a panel discussion on strategies for strengthening African capacity.

Parallel Session Summary: Issues, Capacity Constraints and Recommendations

Panel discussion: Strategies for Strengthening African Water Resources Capacity

Water Resources Research Priorities

Water Resources Management Curricula in African Universities

Water Resources Professional Associations

Network of African Water Resources Professionals

III. CONFERENCE OUTCOMES

Many points of discussion and recurrent themes emerged from the conference. Below I will first summarize the key strengths, lessons learned, weaknesses, challenges, constraints and threats that were identified during the conference. Following, I will highlight several issues that were raised and are relevant for the RCSA's program. Lastly, I will describe the outcomes of the conference, including the suggestion to establish an African Water Resources Forum.

Key strengths and key lessons learned. Water resources policy reform and implementation is gaining momentum across Africa, reflecting increasing awareness of the need for integrated water resources management (IWRM). There is widespread recognition of the importance of civil society engagement in IWRM, with stakeholder consultation a key element of the policy reform process (e.g. in the development water legislation) in many countries. A basin-wide approach is increasingly being adopted, both at the national level, and, importantly, in the many international basins that characterize Africa. There is much open debate on difficult questions of water pricing and cost recovery, on environmental management and tradeoffs, as well as on particularly African issues such as the importance of customary law and practice. Many questions are not yet answered, but the process of reform is well underway – the journey has well and truly begun.

Key weaknesses and challenges. Although IWRM is taking hold in many countries, there is a long way to go and efforts need to be intensified. Policies and regulations – often sound ones – are sometimes unimplemented and unenforced. The most important challenge of IWRM is to provide the enabling environment for universal access to safe water supply and sanitation services. The numerous international waters of Africa present a unique challenge, requiring determined efforts in cooperation and co-management – shared waters should provide a major incentive for economic cooperation. An underlying weakness in IWRM is the limited capacity of individuals and institutions – with a special challenge being the need to develop the inter-disciplinary capacity (technical, economic, legal, social, environmental) necessary for IWRM. A further underlying weakness is the lack of information and data. Contributing to this capacity and information gap is the absence of mechanisms for the sharing of experience, information, and research findings.

Key constraints and threats. Effective IWRM is threatened by many broader factors. The impacts of climate change, though uncertain, could be very serious, and more needs to be done to understand and to manage these impacts. Without intensive efforts in co-management, transboundary rivers could become a threat to regional security. Current national and regional instability and dispute is a major constraint. Weak economies and widespread poverty limit access to

capital, making effective IWRM a particular challenge. The retention of skilled staff is a universal constraint. Population growth, urbanization and industrialization all represent threats that require effective WRM.

Management of Variability. Dr. Robert Watson from the World Bank presented information related to climatic variability and its impact on water management in Africa. He emphasized the fact that there is extreme variability in rainfall (and runoff) and, thus there is a need for management of this variability. For example, in Africa, rainfall variability is generally +/- 40 percent from the annual average.¹ In the SADC region, this variability and inherent uncertainty associated with it have not been embedded within management plans even at a national level. As the RCSA moves towards funding basin-level activities, it will be important to provide riparian countries with tools to address this uncertainty within an international context and ensure that basin-wide management plans and treaties acknowledge the high variability in flows.

Southern African Models. It was clear from the presentations and discussions that many of the innovative and progressive responses to water resources management in Africa were emerging from the southern African region. Integrated water resources management, particularly international river basin management, can be a difficult and cumbersome process. The significant political will evidenced by the SADC Protocol on Shared Watercourse Systems and other on-going regional policy initiatives, provide a positive policy framework under which the RCSA can fund activities with some assurance that their chances of success exceed similar efforts in other parts of the world. In addition, the RCSA could play a significant role in supporting efforts to articulate and publicize these southern African efforts throughout the region and world.

Water as an Economic Good. Water is viewed as a social and public good, but not an economic good. The result of this perception of water is that it is used extremely inefficiently throughout Africa. RCSA's efforts in training in conservation and demand management and promotion of best practices, and through support to the development of natural resource accounts that articulate the economic value of water on a national-level will assist in changing this costly view.

Sovereignty over Water. As Minister of Natural Resources from Lesotho, Monyane Moleleki stated, "We are all downstream, and the hydropolitics of international river basin management should be replaced by a scientific and transparent process of decision-making." Although it is unlikely that we will ever be able to fully squeeze the politics out of water, there are many approaches that riparian countries could adopt to move in that direction. The RCSA plans on supporting several activities that could assist in this transition from political decision-making to participatory and data-based management. First, the RCSA plans on developing guidelines for the management of international river basins. The intent of this work is to forward implementation of the Protocol on Shared Watercourse Systems by defining some of the vague language of the Protocol such as "equitable", "sustainable water resources management," "participatory", "sovereignty", etc. in the context of international river basin management. This definitional process would result from a scan of global experiences and be developed through a regional capacity-building and consensus process. In addition, the RCSA intends on assisting in articulating the roles and responsibilities of the various institutions involved in international river basin management in the region. This articulation will result in recommendations for innovative and effective institutional arrangements for these institutions. In addition, the RCSA will support a short-course in conflict

¹ In the US, if rainfall drops below less than 10 percent of the annual average, a drought situation is said to exist.

management associated with shared watercourse systems. This training will help water resources managers identify potential areas of conflicts and apply specific and tested tools to move beyond these conflicts to joint decision-making. Lastly, the RCSA plans on funding a basin-wide example of harmonizing national laws with the SADC Protocol and other international agreements. The need for such harmonization was underscored at the Conference as a way to help define sovereignty in light of international interests.

The conference also highlighted several other activities that the RCSA could consider funding on an opportunistic basis to help move international water resources management from the political sphere to a more fact-based, participatory platform. These include: citizen-based water resources monitoring and the use of transparent decision-making models to further basin-level management efforts.

Stakeholder Participation. The need for broad stakeholder participation was emphasized repeatedly during the conference, although there were few models presented. The Minister of Water in Tanzania went on to state that, "Conflict over water is largely due to stakeholders not being part of the management process." Others emphasized the importance of building capacity at all levels to understand the importance and mechanisms for this broad based participation. The RCSA has an opportunity to support a basin-wide model to significantly involve stakeholders in the water resources planning process, and thereby create a much needed model. In addition, such a model should recognize customary water law and practices.

Water Resources Monitoring. Dr. Edward Ongley, a specialist in water resources monitoring and reporting, recommends that Africa develop a new paradigm for monitoring that breaks from the western focus on comprehensive, data and capital intensive, systems. He recommends that a more appropriate approach would focus on how to make wise decisions in data-poor environments and involve strategic monitoring plans that identify priorities based on economic and social needs. In addition, fairly simple data collection methodologies are available including biological assessments using field kits and in-stream rapid assessments, and methods for community-based monitoring of water resources. In addition, he supports information technology that brings knowledge into the hands of users and decision-makers. The RCSA should consider supporting such data collection systems and information technology on a basin-level.

Water is an environmental good. Professor Mwalyosi from Tanzania made the emphatic point that, "Water is an economic good, a social good, AND an environmental good." Given that eco-tourism is a promising sector for economic development in southern Africa, and that most of this tourism is water-dependent, it makes economic sense to develop mechanism to ensure that the aquatic ecosystems in the region are protected. South Africa has found that biological indicators can be cost effective and yield useful information.

An overriding conclusion of the Conference was the need to intensify the communication process established in the Conference. As a starting point, the establishment of an **African Water Resources Forum (AWRF)** for the exchange of knowledge (including experience, research findings and information) among African WRM professionals and practitioners is proposed. Such a Forum would need to link to national and regional professional associations and to other mechanisms, such as those set up by the Global Water Partnership. The Forum will need a volunteer Task Force to guide its activities and a small and sustainable secretariat. The conference constituted a small, interim Task Force to develop a mechanism for sustaining dialogue and exchange of experience

through an African Water Resources Forum. The World Bank agreed to identify support for a 6-month contract for an African Water Resources consultant to serve as a temporary secretariat to the Task Force.

Contributing to Africa's 2025 Vision for Water. This vision comprises where Africa wants to be in 2025 and how it can get there, as a contribution to the World Water Vision held in The Hague in March 2000. The Conference generated many ideas to contribute to such a vision, including full and sustainable water and sanitation coverage, regionally harmonized environmental management (particularly of watersheds and invasive weeds), and efficient river basin organizations (including international organizations), with full civil society and private sector participation in water management. The Conference proposed that the AWRF Task Force support the appropriate institutions on the development of Africa's Vision.

IV. PROJECTED IMPACTS OF RCSA FUNDING

Although the RCSA-funded the participation of several country teams from the region, only Namibia and Lesotho sent back the questionnaire that requested information from the teams on the impact of the conference on their work in the water sector both at a national and at an international level. The questionnaire was included in their letter of invitation, a copy given to the team during the conference, and a follow-up fax was sent to the teams a month after the conference, but there was still limited response. Below is a summary of the reports from Lesotho and Namibia.

Just a week before the conference, the **Government of Lesotho (GOL)** adopted a Water Resources Management Policy of which implementation and enforcement are the next stages. The GOL reported that many of the mechanisms discussed such an integrated approach to water resources management, have been adopted by the GOL in their new Policy and having these mechanisms supported at the Conference reinforced this approach. In addition, the GOL team benefited from discussion associated with the management of shared watercourse systems, and through the conference better understood their role as upstream riparian with a responsibility to better maintain downstream environmental conditions.

The **Namibia Country Team** described their country's efforts to address issues of water scarcity and the need to promote equitable and sustainable water resources management. Towards this end, Cabinet of Namibia endorsed the Water Resources Management Review in May 1997. This Review aims to undertake a comprehensive review of all water related activities in Namibia, including the arrangements for negotiating shared international waters. The review is expected to lead to recommendations for a reformed institutional framework for water management in Namibia. The GON team reported that the Conference benefited them in the following ways:

- Realization of the importance of stakeholder participation in water resources management.
- Realization of the need for sound capacity building in water resources management.
- Acquaintance with various aspects of policy/regulation of water resources.
- Support that the Namibia Water Review is on track, but that some countries in Africa have done more than Namibia in terms of rural water supply and general coverage of water provision to their population.
- Realization that sustainable water resources management policy reform and implementation is gaining momentum across Africa.

- Realization that communication between countries and within countries (between ministries and within ministries) is key and that Namibia must make significant progress in this area. There is significant expertise and experience within Africa that needs to be shared across countries.
- Acknowledgement that the SADC WSCU is playing a vital role in southern Africa in terms of increasing communication between countries in the region.
- Importance of exchanging information amongst practitioners and professionals on the African continent and establishing some degree of networking among them.
- Recognition that national water planning must be done in the context of shared river basins and not just on a national-level.

V. RECOMMENDED FOLLOW-ON ACTIVITIES

From the conference, several follow-on activities emerged that should be pursued by the RCSA, including:

- 1) The World Bank requested that USAID consider supporting one of the themes of the Forum, possibly the "Environmental Theme." The specifics of what this support would entail were not outlined, possibly funding several review papers and a workshop to lead up to the next Forum meeting. I discussed the possibility of this with Africa Bureau and with the REDSO in Kenya, both of which expressed interest in a USAID-funded theme with support coming from various missions and the Africa Bureau. The RCSA should follow-up on this with Rafik Hirji or David Grey at the World Bank.
- 2) Dr. Heather MacKay from Department of Water Affairs and Forestry in South Africa requested funding from the RCSA to support a 4-month post-doc at Tufts University in Massachusetts. The intent of the post-doc would be to write up the process by which South Africa drafted, passed, and is now implementing their new water law. South Africa's new water law is the most progressive and promising national water legislation in the world and Dr. MacKay played a lead role in the drafting and now implementation of it. Lessons learned from the South Africa experience could be very important for other countries in the region as they begin to revamp their water policies, strategies, and legislation.

Appendix A : Full Participants List

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