DEVELOPMENT CHALLENGES OF WATER RESOURCES MANAGEMENT IN AFRICA.

A BRIEFING NOTE

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<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Background</td>
<td>3</td>
</tr>
<tr>
<td>2. State of Africa’s Water Resources.</td>
<td>4</td>
</tr>
<tr>
<td>3. Brief review of Africa’s Water Challenges.</td>
<td>5</td>
</tr>
<tr>
<td>4. Financing Water Sector Development in Africa.</td>
<td>8</td>
</tr>
<tr>
<td>5. ECA’s Role in meeting these challenges.</td>
<td>10</td>
</tr>
</tbody>
</table>
1. Background.

Africa is a continent of great possibilities and great uncertainties. In the management of its water resources, the uncertainties are characterised by cyclical floods and droughts. Examples of these phenomena are the floods which occurred last year in Mozambique rendering a million people homeless, killing thousands, wiping out farms and cattle on which most rural people depended and reversing an impressive economic recovery of a country emerging from decades of civil strife and instability. Similar floods occurred two years ago in Kenya and Tanzania as a result of El-Nino rains with devastating effects on the livelihood of their people through the destruction of infrastructure, disease and other damage.

On the other extreme is the occurrence of droughts and resultant famine which has become endemic in the Greater Horn of Africa where it is estimated that up to 23 million people have been affected by drought the last couple of years. Earlier in 1991/92 in Southern Africa, a similar drought affected 20 million people with relief action estimated to have cost US$ 2 billion.

Great possibilities of utilising Africa’s Water Resources also exist. An inspiring example is the Lesotho Highlands Water project which is one of the greatest engineering feats of the 20\textsuperscript{th} century. This multi-million dollar scheme exports water from one of Africa’s tiniest and most insecure economies to the thirsty industrial heartland of its economic giant, South Africa. “White gold” as Basotho call their water, is now a major earner and saver of foreign exchange, as the mountain kingdom has become self-sufficient in electricity as a bi-product of the project.

Sustainable socio-economic progress is seldom possible without adequate development of water resources to support food production, industry, the environment and other human needs. In Africa, the uneven and unpredictable nature of water resources has determined the human condition and lifestyles of nomadism and nature induced migrations in the arid regions in the North and South.

Fourteen African countries are experiencing water stress or water scarcity and this figure is expected to increase to twenty-five by 2025, partly due to population growth and urbanisation which are currently estimated to be 2.7 % and 5 % annually. Similarly a World Bank analysis of transboundary river basins in 1995 indicated that eight river basins already faced water stress and four basins faced scarcity. This is expected to increase to sixteen river basins facing water scarcity by 2025.

On a continental scale, inadequacy of rainfall is not the fundamental issue facing water resources in Africa. The key issues appear to be related to management of the available resources. It is an issue related to the adequacy of the enabling environment under which water resources are managed at local, national and inter-country levels. Current institutional arrangements do not lend themselves to the adoption of the Dublin principles

The basic principles are that water should be treated as an economic, social and environmental good and: policies and options that guide water resources management should be organized within an integrated framework. The central objective of the Dublin Principles is to promote efficient, equitable, and sustainable development through Integrated Water Resources Management (IWRM).
Moreover, they do not lead to sustainable financing of investments. There is therefore a need for institutional reform to improve performance in the water sector. Such reform should be underpinned by the adoption of the Dublin Principles.

Fortunately, many African countries have risen to the challenges that confront them. In the field of water policy, strategy and institutional arrangements, a number of advances have been made. A good example is within the Southern African Development Community (SADC) where a community-wide Water Protocol has been drawn up and is being implemented. There is also an increasing commitment to water policy reform and a strong trend towards decentralisation of water institutions. Furthermore, there is a thrust towards financial sustainability in the water sector and a realisation of the importance of treating water as an economic good, while providing a safety net for the poor.

3. Challenges of Water Resources Management in Africa

Basically, there is need for a new way of thinking about water resource management. Africa’s water resources need to be managed to secure adequate and reliable supply of water to support our socio-economic development. At the same time, they should be managed to protect the gains of development from the potential damaging impacts of too much or too little water resulting from floods and droughts.

This calls for a form of water resources management envisaged by the Dublin Principles and referred to as Integrated Water Resources Management or IWRM, which is reflected and advocated in the Africa Water Vision (box below).

The African Water Vision 2025

The Africa Water Vision for 2025 is designed to avoid the disastrous consequences of Floods and Droughts and lead to a future where the full potential in Africa’s water resources can be readily unleashed to stimulate and sustain growth in the region’s economic development and social well being.

The shared vision is for:

AN AFRICA WHERE THERE IS AN EQUITABLE AND SUSTAINABLE USE AND MANAGEMENT OF WATER RESOURCES FOR POVERTY ALLEVIATION, SOCIO-ECONOMIC DEVELOPMENT, REGIONAL COOPERATION, AND THE ENVIRONMENT
A brief summary of the challenges to achieving this Vision in 2025 can be summarised as follows:

1. Providing sustainable access to water to meet basic needs for all.
2. Ensuring water availability for food and energy security.
3. Reserving adequate quantities of water of appropriate quality for ecosystem maintenance.
4. Rapid implementation of institutional reforms for good governance with emphasis on decentralisation of authority, public private partnerships, community mobilisation and the enhancement of the role of women in decision making especially in rural water development.
5. Reversing man-made water quantity and quality problems such as overexploitation, pollution and degradation of watersheds.
6. Achieving sustainable financing of investments in water supply, sanitation, Irrigation, hydropower generation and other uses.

There is growing recognition that the user community or beneficiaries has to assume responsibility for action and that entities external to the user community (Government Agencies, NGOs and others) must provide a supportive and enabling environment.

Various stakeholders within the World Water Forum process have discussed these challenges and a Framework for Action to meet them was developed for Africa. Milestones and Targets proposed within the Framework for Action are presented in Table 2 and the indicative annual investments required was drawn up by the African Water Task Force led by the African Development Bank, ECA and other partners. These costs are summarised in Table 3.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improving Governance of Water Resources</td>
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<tr>
<td>1. Development of national IWRM policies and comprehensive institutional reform.</td>
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<tr>
<td>- In process of development</td>
<td>100% of countries</td>
</tr>
<tr>
<td>- Full implementation</td>
<td>100% of countries</td>
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<tr>
<td>2. Enabling environment for regional cooperation on shared water.</td>
<td></td>
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<tr>
<td>- Initiated in existing river-basin organizations</td>
<td>100% of organizations</td>
</tr>
<tr>
<td>- Implemented in existing river-basin organizations</td>
<td>50% of organizations</td>
</tr>
<tr>
<td>- Initiated in new river-basin organizations</td>
<td>100% of organizations</td>
</tr>
<tr>
<td>- Implemented in new river-basin organizations</td>
<td>50% of organizations</td>
</tr>
</tbody>
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## Improving Water Wisdom

### 1. Systems for information generation, assessment and dissemination
- Established at national level
- Established for international river basins
- **Established at Africa-wide level**

### 2. Sustainable financing for information generation and management
- Review of global experience
- Implementation at national level
- Implementation at river-basin level
- Implementation at Africa-wide level

### 3. IWRM Capacity-Building
- Create public awareness and consensus
- Knowledge gaps identified
- Partnerships for strategic assistance
- National research institutes established
- Regional research institution established
- Gender/youth concerns mainstreamed

## Meeting Urgent Water Needs

### 1. Proportion of people without access:
- to safe and adequate water supply
- to safe and adequate sanitation

### 2. Water for achieving food security
- Water productivity of rain-fed agriculture and irrigation
- Size of irrigated area

### 3. Development of water for agriculture, hydropower, industry, tourism & transportation at national level.

### 4. Conservation and restoration of environment, biodiversity, and life-supporting ecosystems
- Allocation of sufficient water for environmental sustainability. Conserving and restoring watershed ecosystems

### 5. Effective management of drought, floods and desertification

## Strengthening Financial base for desired water future

### 1. Sustainable financing for policy and institutional reform and capacity-building

### 2. Sustainable financing for information generation and management

### 3. Financing urgent water needs
- Implementation of pricing and full cost recovery
- Increasing private sector participation
- Mobilizing finance from national and international sources.

### Progress Status:
- **100% of countries**
- **100% of basins**
- **100% complete**
- **50% complete**
- **30% complete**
- **100% of countries**
- **100% of countries**
- **100% of countries**
- **100% of countries**
- **100% of countries**
- **75% complete**
- **70% complete**
- **60% of countries**
- **50% of countries**
- **30% of countries**
- **25% of potential**
- **10% of potential**
- **25% of potential**
- **Implemented in 30% of countries**
- **Under development**
- **Operational in 50% of countries**
- **Operational in 100% of countries**
- **Implemented in 100% of river basins**
- **Operational in 100% of countries**
Table 3: Summary of Indicative Investment Requirements

<table>
<thead>
<tr>
<th>Framework for Action Cost Centre</th>
<th>Annual Investment USS billion</th>
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<tbody>
<tr>
<td>1. Water supply for basic needs</td>
<td>5.00</td>
</tr>
<tr>
<td>2. Sanitation and hygiene</td>
<td>7.00</td>
</tr>
<tr>
<td>3. Irrigation and water-productivity improvement</td>
<td>4.00</td>
</tr>
<tr>
<td>4. Water for industry, energy and transport</td>
<td>2.10</td>
</tr>
<tr>
<td>5. Flood and drought management</td>
<td>0.40</td>
</tr>
<tr>
<td>6. Policy and institutional reform and capacity-building</td>
<td>0.35</td>
</tr>
<tr>
<td>7. Knowledge and information</td>
<td>0.45</td>
</tr>
<tr>
<td>8. Awareness and education</td>
<td>0.45</td>
</tr>
<tr>
<td>9. Research and development</td>
<td>0.25</td>
</tr>
<tr>
<td>10. Total</td>
<td>20.00</td>
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It is clear that the financial requirements indicated are much higher than can currently be mustered by African Governments.

4 Financing Water Sector Development in Africa

Finance is the main limiting factor in harnessing Africa's abundant water resources to meet the milestones and targets set out in the African Water Vision 2025. It is a limiting factor at many stages of water development ranging from the resource assessment, through programme/project development, operation and maintenance and project sustainability.

Some specific sources, which together may be mobilised to meet these financial needs, are:

1. HIPC savings. This requires that water should be explicitly included in PRSP proposals. The current institutional framework in most African countries have no Ministries of Water Resources and water issues are dispersed between Agriculture, Health, Energy etc.

2. A fixed percentage of African Government budgets (for example 5%) could be devoted to Water Resources Development and Management. A justification for this is that “prevention is better that cure”. Since most of the common diseases in Africa (i.e. malaria, dysentery, cholera, etc) are either water borne or water related, provision of clean water will reduce the disease burden and raise productivity in many African countries.

3. Bilateral and Multilateral Aid could be earmarked as matching funds to African Governments' budgetary commitments.

4. Urban Revenue transfer for Rural Water Supply development and national capacity building efforts in the water sector. This can be justified by the fact that
Water coverages in rural areas lag far behind those in urban areas whilst the ability to pay is reversed.

5. Private sector finance from commercial entities
7. Non-governmental or charity sources.
8. Traditional communal resources where mainly rural people join together to finance local projects such as the “harambee” approach in Kenya.

Ideally, a specific mix of these sources should be utilised in meeting the targets set out in the Framework for Action. This mix depends on various factors which include:

1. National policy and economic environment prevailing in individual countries.
2. The location of the beneficiaries either in urban or rural areas.
3. The income levels of the beneficiaries.
4. The development costs of the water programmes/project.
5. The development impact on disease burden and human productivity.
6. Political will and governance.

**FINDING THE PERFECT MIX**

During the past 30 to 40 years, countless such meetings have been held throughout the world in an effort to improve the lives and well-being of the many millions of people who do not enjoy even the most basic of services. During the course of this time, a great many lessons have been learned in the water supply and sanitation sector, new ideas have been tried, and there is certainly a better understanding of the problems now than even five or ten years ago.

However, in some respects, we are no closer to the answer than we were twenty years ago. Coverage levels remain a disgrace, and the burden on the poor remains. In fact, given the impact of ever-increasing populations, the burden is increasing. Using the terminology of being "closer to the answer" however, is something of a giveaway. All through the course of the past few decades, the search has been for "the answer". There have been champions of different "answers" regularly through this period. In the 1960s and early '70s, the solution was thought to be appropriate technology. Then greater understanding grew of the importance of community involvement. It became clear, however, that involvement alone was not enough. Community-based development was necessary. This required capacity building, which was the next answer. This was followed by the understanding that development needed to be demand-driven. With the sustainability of services still remaining elusive, in more recent years the involvement of the private sector has been seen as the solution in some quarters. Another realisation has been the importance of institutional arrangements including investigating the question of centralised versus decentralised services provision. Today we are here to look at the issues of financing of services in the light of new models such as the use of social funds. The current wisdom is that there is no single solution, no "silver bullet". The solution lies in getting all of the different components together. However, if we were to get the perfect mix of these issues, would we really be able to move towards universal coverage?

*Len Abrams*
Almost all of the suggested sources of finance are subject to debate. The major current debates are over the role of Private finance and Public-Private-partnerships. It is proposed that these forms of finance may be suitable for Urban situations on the assumption that the ability of beneficiaries to pay is higher. This argument is partially correct in most African countries but very tenable in towns and cities with large peri-urban populations who may be economically worse off than rural populations.

An argument gaining credence is to view the inadequate water situation as a problem of prevailing poverty in Africa. When analysed as a poverty issue the argument can be made that access to water to meet the targets set in the African Water Vision must be an explicit objective of the Poverty Reduction Strategy Process (PRSP) currently being undertaken in a majority of African Countries. The adage "Prevention is better than cure" becomes valid since access to water for productive uses reduces the disease burden (thus reducing health costs) and improves food security (elimination of the effects of droughts).

Lastly no amount of financial resources can solve Africa’s water problem without firm commitment by it’s political leaders and decision makers. Efficient utilisation of financial resources can only be achieved when the basic tenets of Good governance such as transparency, accountability and subsidiarity in public functions are observed.

5 **ECA’s Role in meeting these Challenges.**

The Economic Commission for Africa, as the UN’s Regional arm, plays a coordinatory role within the UN and other regional bodies such as the African Development Bank and the African Union. The framework for co-ordination is the Inter Agency Group on Water in Africa (IGWA) which includes all UN Executing Agencies, AfDB, AU and River Basin Organisations and IGO’s such as the Global Water Partnership.

The broad goal of ECA’s Program is to contribute to the satisfactory fulfilment of the role of Africa’s water resources in poverty reduction and sustainable socio-economic development. This is in recognition of the fact that water development in Africa is not an end in itself but an essential instrument for poverty reduction and economic growth. To achieve this, a related and important goal is to create awareness and highlight the need for raising the level of priority among African decision-makers of the cross-cutting role of water in poverty reduction and socio-economic development.
These goals are translated into the following specific objectives and program components:

1. **Awareness raising:**

   The objective is to create awareness of the African Water Vision 2025 and the adoption of the concept of Integrated Water Resources Management (IWRM) in the formulation and implementation of Water Resources Development Plans for Poverty Alleviation in Africa. Towards this objective ECA has undertaken advocacy activities at various forums (within and outside Africa), co-published the Vision under the title “Safeguarding Life and Development: A Vision for Water Resources management in the 21st Century” and mounted Exhibitions at the 2nd World Water Forum, African Development Forum and plans to contribute to the Water Dome at the Earth Summit 2002 in Johannesburg South Africa. To sensitize policymakers every opportunity has been used to make presentations on African Water Challenges for example to the Forum of Afro-Asian Parliamentarians on Population and Development held in Tokyo in December 2001.

   In addition a consensus was reached within the IGWA and UNSIA water cluster that ECA should establish an African Water Information Clearing House (AWICH) which will involve setting up an information collection, analysis, retrieval and dissemination facility on all aspects of Africa’s Water Resources pooling together UN system-wide information and information from other sources both public and private. Initial funding for this facility has been offered by the Netherlands Ministry for Development Cooperation and is planned to be operation by the end of 2002.

2. **Monitoring and Evaluation:**

   The objective is to develop an authoritative bi-annual report on the status of water resources in Africa which will serve as an instrument for decision-makers in monitoring and evaluating progress made in the Implementation of the African Water Vision 2025. The first edition African Water Development Report is planned to complement the World Water Development Report but with a broader and more in-depth analysis of African Water Issues. The premier edition is planned to coincide with the 3rd World Water Forum in 2003 in Kyoto, Japan subject to securing funding.

3. **Capacity Building:** The objective is to develop the institutional and human capacities for the implementation, monitoring and evaluation of IWRM in Africa. After evaluating the comparative advantages of the various stakeholders in African Water Resources, ECA has initiated a series of Workshops on the Implementation of IWRM in Africa. The first series at the Sub-Regional level was started for West Africa in October 2001. The target groups are policymakers in both Governmental and Non-Governmental Organisations who have influence in Water Resources Management in Africa. These include in addition to water professionals, Economic planners, Finance, Donors, Researchers, Journalists, Parliamentarians and
Subregional bodies such as Regional Economic Communities (RECs), River Basin Organisations (RBOs) and ECA’s Sub-Regional Development Centres. The next steps will be to conduct National Workshops to facilitate the Development of National Water Visions and Framework of Action which can be translated programmes/projects which reflect the National priorities and means for achieving the targets of the African Water Vision 2025.

4. **Transboundary Cooperation:** The objective is to strengthen the Role of Shared Water Resources in Regional Integration in Africa. Considering the fact that most rivers/lakes/aquifers in Africa are transboundary and that few of them have any Protocols, Arrangements or Common Integrated Management Strategies to harness their economic value on a regional or supra-national basis, coupled with the potential for Conflict as populations increase and the resources gets scarcer, ECA plans in the short-term to undertake a comprehensive analytical study to answer the following questions among others:

a) What extent can Water Sharing contribute to Regional Integration in Africa?

b) What impact have the few RBOs had on Regional Integration?

c) What are the demonstrated strengths and weaknesses of these RBOs?

d) How can the RECs as the building blocks of the African Union use the development of Water bodies to help achieve their economic and political objectives?

The study will also inventorise the Best and the Worst cases and lessons to be learned. Furthermore, it will develop guidelines for the development of Protocols and Managing Transboundary Waters.

Another major activity to be undertaken in strengthening the management of transboundary water resources is the Development and Maintenance of an African Regional Information System on Shared /Transboundary Water Resources. This activity will also support the advocacy and monitoring and evaluation work.