WATER AND SUSTAINABLE DEVELOPMENT IN AFRICA

An African Position Paper

INTRODUCTION

At the dawn of a new millennium, Africa finds itself at a critical juncture. It is at a point where it must choose between being marginalized and being integrated into a fast evolving global economy spurred on by recent advances in information and communications technologies. In the event, African leaders have chosen the second option. They have unveiled a New Partnership for Africa's Development (NEPAD). This is a bold and unprecedented initiative. However, the success of this bold initiative would depend upon the extent to which Africa's human, economic, technological, and natural resources can be applied to this new vision. Thus this is the time for all sectors in Africa to consider the role they can play in this new and bold initiative. This paper is about how water can help.

Africa is endowed with precious, industrial, and strategic minerals. It has oil, forest and natural features, an attractive tourist appeal. Its vast agricultural potential remains largely under-exploited. In the immediate post-colonial era, the development of these assets was hampered by conflict, political insecurity and inadequate accountability and openness in governance. However, at the dawn of this new millennium, there is progress. Democracy is spreading; there is a collective African effort to deal with conflict and political instability; and there is a growing awareness of the benefits of participation by civil society, women and the youth.

Yet there is still a danger that Africa will be marginalized in a world that is undergoing rapid globalization and economic development spurred on by recent advances in information and communication technologies. Today, Africa remains one of the poorest and least developed continents of the world, with 340 million of its people, half its population, living on less that US$1 per day. Only about 60 percent have access to safe water supplies. Food insecurity is critical, with the undernourished exceeding over 200 million people. Debility and mortality from preventable communicable disease like malaria, HIV/AIDS, and diarrhoea are high. The mortality rate of children under five years is 140 per 1000, and life expectancy at birth is only 54 years. The rate of illiteracy of people over 15 is 41 percent. Africa's poverty stands in stark contrast to prosperity in other parts of the world.

Africa's leaders and global communities believe that Africa can break free of poverty if we can overcome the "development trap that confines it to a vicious cycle of underdevelopment, conflict, and suffering. Africa's Heads of State have responded to this challenge by unveiling the New Partnership for Africa's Development (NEPAD) which seeks to lay the foundation for sustainable development in Africa. Given this political leadership, what should be the response of the water sector to this challenge? This paper

is an attempt to create a platform for addressing this question.

In preparation for the Second World Water Forum in 2000, an Africa Water Vision was prepared. Based on it, a framework for action on water has been produced for Africa; and IGWA (an inter-agency group on water for Africa) has decided to use it as the basis for the work of its agencies in Africa.

Already there has been progress. The principles of integrated water resources management (IWRM) have been widely embraced. At national level, there have been significant water policy reforms accompanied by important technical developments in the water sector with parallel initiatives at the political and economic development levels. What is now needed is development of the link between national, sub-regional and regional water programs and the broad political and economic policy programmes.

There is a need for an understanding of the significance of investment in water for socio-economic development programs and an understanding of the broad development path for Africa in the water sector. Without this, low priority will be given to water in national budgets and in economic development programs.

The NEPAD initiative offers a rare opportunity to establish this link. This paper aims to show the link between water and sustainable development in Africa and how water can help in achieving the goals of NEPAD.

There is already a general appreciation that water has a vital role in all forms of development. What is less well understood is what needs to be done to mobilise the potential of water for development and to ensure that water does not become a constraint to sustainable development, capable of wiping away the gains of development either progressively or overnight, as happened in Mozambique in the floods of 2000. Decision makers also need to know that, unless correct approaches are taken, economic and social development could negatively impact on water resources and that this in turn could constrain future development efforts.

The specific objectives of this paper are therefore:

- To summarize the NEPAD agenda for sustainable development in Africa.
- To show the vital and indispensable role for water in the success of the NEPAD agenda for sustainable development in the 21st century.
- To identify critical water issues in Africa that could undermine NEPAD, and constrain sustainable development.
- To identify strategies for addressing these issues.

- To propose an Africa-wide water agenda to support the NEPAD agenda and underpin sustainable development in Africa in the 21st century.

THE NEPAD AGENDA FOR SUSTAINABLE DEVELOPMENT IN AFRICA

Definition of NEPAD

NEPAD, the New Partnership for Africa's Development, is a vision and a program of action for the redevelopment of the African continent. It is also a vision of partnership between Africa and the rest of the world. Conceived and developed by African leaders under the auspices of the Organization of African Unity (OAU), it was endorsed by leaders of the G8 countries on 20 July 2001.

NEPAD provides a platform for a comprehensive integrated development plan designed to address key social, economic, and political priorities in a coherent and balanced manner. It is also a commitment by African leaders to African people and to the international community that they have resolved to place Africa on a path of sustainable growth and accelerated integration into the global economy. It is a call for support of African development on the basis of Africa's own agenda and program of action. Finally, it is a clarion call to the people of Africa to assume ownership of their own destiny.

Objectives and Focus

The long-term objectives of NEPAD are to eradicate poverty in Africa and place African countries on a path of sustained growth and development and thus halt the marginalisation of Africa in the globalization process.

Recognising the need for African countries to pool their resources together to enhance their competitiveness, NEPAD calls for the strengthening of the five sub-regional economic groupings of the continent. Accordingly, it focuses on the sub-regional and regional levels, and not at the national level. Thus there is a focus on the provision of essential regional public goods and the promotion of intra-African trade and investments - a focus which is important for addressing some key water issues facing Africa. The NEPAD approach should help define and create the strategic framework and broader picture for African development allowing the national level developments to fill in the individual parts of the picture.

Priority Areas

There are eight priority areas in the plan including a number in which water features strongly. They are:

1. Infrastructure
    a. Information and Communication

   b. Energy
   c. Transport
   d. Water and Sanitation
2. Human resources development initiative
3. Health
4. Agriculture
5. Environmental initiative
6. Culture
7. Science and technology initiative
8. Access to the markets of developed countries for African Exports

For each of these priority areas, strategic objectives and expected actions have been identified. For each of them, the goal is to bridge existing gaps between Africa and the developed countries so as to improve the continent's international competitiveness and enable it to participate effectively in the globalization process.

WATER, NEPAD AGENDA, AND SUSTAINABLE DEVELOPMENT

Water is integral to sustainable development. This is highlighted in what follows by examining the links between water and the sustainable development agenda provided by NEPAD, starting with three of the economic sectors which must provide the engine for development and improved social welfare.

Energy

One focus of the NEPAD program is the development of Africa's energy resources. An important element of this is the development of the substantial, untapped, renewable resource represented by the hydropower potential of the river basins of Africa.

Assurance of the reliability and sustainability of water flows in Africa's river basins is clearly a prerequisite for the success of the hydropower component of the energy plan. Experience has shown that, to achieve this, there must be proper management of the land and forestry resources within the river basin areas. Failure to do so could result in siltation of the reservoirs and reduce flows of water into the reservoirs.

Dams created for hydropower purposes pose social, cultural and environmental challenges. Water impoundments cause displacement of inhabitants of the inundated areas where the poor are often most affected, requiring special precautions. Proper resettlement and rehabilitation of those displaced, planned with the participation of those affected, can significantly improve the impact of such projects on the poverty of the displaced people and may be preferable to other forms of compensation.

Without proper planning impoundments and other water developments may exacerbate health problems such as malaria, yellow fever, and bilharzia. Yet dams may also improve health conditions as discussed in the health section below. Impoundments by dams create

changes in ecological conditions upstream and downstream of the dams. These changes may have beneficial or adverse economical impacts and need to be addressed in an integrated manner.

Aside from hydropower, other sources of energy, such as thermal power also depend upon water for production of the steam needed to drive the turbines. Similarly, traditional wood-based fuel depend upon water for the sustainability of the wood supply and for ensuring that deforestation for fuel wood does not occur, with all its impact on the environment, including the risk of contributing to the desertification process.

The energy programme to support NEPAD thus depends to a significant extent upon water for its success. It could, however, have an adverse impact on health, poverty and environmental initiatives unless appropriate attention is paid to mitigate any possible harmful side effects.

Transport

Transport is a vital focus area for NEPAD. In Africa, water-borne transport is of limited scope although it plays an important role in specific locations. Properly planned water resource development can however support river transport and help to maintain the effective functioning of coastal ports, thus contributing in a small but significant way to the achievement of NEPAD's goals.

Agriculture

NEPAD recognises that agriculture is of central importance in Africa. It accounts for about 35 percent of the gross national product (GNP) of the region, 40 percent of its exports, and 70 percent of its employment. Agriculture should therefore be the engine of growth in rural areas where about 70 percent of Africa's poor live. A key structural constraint to improvements in agricultural productivity is climatic uncertainty which increases the risks facing intensive agriculture in the continent.

Irrigation is a key to unlocking this constraint. This means, that security of agricultural productivity in Africa, depends heavily on the reliable availability of water. Although agriculture is by far the largest user of water in most African countries, in two-thirds of them, less than 20 percent of their irrigation potential has so far been developed.

To mobilise water for agricultural development, specific initiatives including the construction of storage and transport infrastructure will be required to make water reliably available. Yet many projects to develop water infrastructure to support agriculture have in the past been less than successful. This highlights the fact that water managers cannot simply concern themselves with water development. They have to ensure that their programmes are integrated with those for the other dimensions of agricultural development. For this reason, they will have to work with their colleagues in a collaborative manner; the land and water component of NEPAD's agriculture and food security programme provides a framework in which to do this.

Agriculture can also impact on water resources. Both quantity and quality of water are limiting factors in agriculture which can itself have an adverse impact on the quality of water. In Northern Africa, irrigation in poorly drained areas has resulted in water logging, salination, and seawater intrusion in some areas. In other areas, irrigation has led to water quality deterioration. Notable examples are residuals from fertilizers and pesticides washed into receiving bodies of water, reducing their dissolved oxygen content and thereby affecting their fish productivity and their suitability for certain downstream beneficial uses.

This two-way link between water and agriculture must be recognized: water serves as a major and limiting input into agriculture and thus food security. At the same time, agricultural use of water can have a negative physical and qualitative impact on water bodies. Hence, appropriate attention needs to be paid to the use of water in agriculture if other goals of NEPAD are not to be undermined through agricultural use of water.

Access to Markets of Developed Countries

To achieve the goals of NEPAD will require substantial financial resources. The market access initiative under the section of NEPAD that deals with resource mobilization is thus highly relevant since it holds the key to enabling Africa to move to a position where it can fund and sustain its own development.

Nine priority areas have been identified under this initiative. In addition to agriculture which has already been discussed, this initiative also includes the areas of mining, manufacturing, and tourism. These all depend upon water availability and water quality, and on the availability of energy which may be derived from water, for their success. However, they are also areas whose development may create adverse impacts on the quality of water in the receiving environment unless such development is properly managed.

There is therefore a reciprocal relationship between water and the success of this initiative too. Indeed, one important thrust of this paper is that, correctly managed, water can contribute to the economic development that will in turn sustain the social and environmental needs.

Those in the productive areas have the potential to generate sustainable economic activities and should not be dependent on development aid in the long term for this reason.

Water and Sanitation

The objectives and actions envisaged under this component of the NEPAD program are all in the mainstream of water management. They reflect the attention that needs to be given to water to ensure that the water-dependent components of the program are not jeopardized.

Here water contributes both to the economic sectors as already outlined and to the social goals, some of which will be discussed below. The key areas on which NEPAD has focused are as follows:

Integrated Water Resource Management

It has been widely demonstrated that the effective management of water for economic and social development as well as for environmental protection requires an integrated approach. To achieve this, appropriate management approaches have to be developed at a number of levels, starting locally with water users, moving to catchment level and then to national and regional level. Since the water cycle occurs largely within naturally defined water catchments or river basins, it is important that management is structured to reflect this and, in the NEPAD context, to provide support to local, national and regional authorities to apply the IWRM approach.

Water resource management can include the construction of storage, control and water transport structures (dams and canals) but should begin with the assessment of the water resource and existing and future water uses and seek to identify options for reconciling any gaps that may exist between supply and demand. Attention must also be given to the system of allocating water between users which must provide both equity and security for users. For a managed water system to be viable, sound financial arrangements are also required which will usually require users to contribute to the costs of water management.

Management of Shared River Basins

A special case of integrated water management is the management of water in catchments which cross national boundaries. While there has been a focus on the conflicts that can result, the emphasis in NEPAD is on promoting cooperation between neighbours through the management of shared water.

Cooperative programmes such as the Nile Basin Initiative as well as cooperation in shared river basins in West and Southern Africa has demonstrated that a focus on cooperation through seeking to share benefits from water management and use rather than on focusing on conflicts between water users is likely to be more productive.

Disasters: Floods and Droughts

One area of focus in which cooperation is vital is in the mitigation of floods and droughts which are an inevitable consequence of the natural variability of the water cycle. This is a practical area in which sound water resource management and cooperation between neighbours sharing water resources are crucial.

Given the fact that there is a relatively small amount of storage and flow control infrastructure on African rivers, there are limits to the extent to which floods can be prevented and a reliable supply of water assured during periods of drought. It is therefore critical to mitigate the impact of such events by ensuring that agricultural and related activities are based on a sound understanding of the risks and that human settlements are located in a manner that does not leave them vulnerable to extreme floods.

The NEPAD programme envisages a strengthening disaster management capacity at continental and regional level and water management related issues will necessarily be an important component of this.

Climate Change

A sub-element of water management and disaster management is the impact of climate change on water resources. Current projections suggest that climate change, driven in part by human activity, is likely to include changes in mean temperatures and rainfall as well as increased variability in rainfall. This is likely to exacerbate the impact of natural disasters and, because of the potential scale of the impact, programmes to address it require special attention.

Such programmes will seek to identify the likely trends as well as the actions to be taken to mitigate them. These may range from encouraging a shift in the patterns of agricultural production to increasing storage in large dams for both flood control and water supply purposes. The funding of these activities, which are required because of human activity in other parts of the world will also require the development of special instruments which should reflect the origins of the problems.

Water Supply and Sanitation Services

The immediate focus for the water sector is necessarily on meeting the water related needs of the society. A key priority is to provide access to safe water for those without. As important, indeed it can be argued, a necessary precondition for meeting the social needs is to ensure that the water service needs of the economy can be met. The establishment of efficient and sustainable organisations to provide these high level water service needs is therefore critical and one area of focus for NEPAD is to support initiatives to ensure that water utility management is improved throughout the continent. Sound management is also essential if funding for investment in system expansion is to be obtained when required.

This initiative will also support the focus on meeting social needs for access to reliable basic water supply and sanitation services, particularly in Africa's fast-growing large cities where people cannot rely on locally developed and managed solutions to meet their water needs. More generally, particularly for rural areas and small towns, programmes of support are required to promote best practice in the provision of services. Given the poverty of many of these communities, ongoing financial support will be required. Since the provision of water services is best managed at a local level, a community or local government focus is required.

A special area of attention is sanitation since without effective sanitation, water resources become polluted and cannot be used to meet the needs of the society. While large scale sanitation infrastructure may be required in large conurbations, dedicated programmes are required to promote improved sanitation in poor peri-urban and rural communities. The focus of these programmes should be as much on health and hygiene as on infrastructure provision because unless water and sanitation facilities are properly used, inherent health benefits will not be achieved. The "Water and Sanitation for Health" (WASH) programme approach is another area of NEPAD's focus.

Poverty Reduction

The water and sanitation programme provides a bridge between the economic and social focuses of NEPAD. While the specific objectives and actions identified under the poverty reduction component of the NEPAD programme do not show any direct linkages with water it should be clear that water has a critical role to play in poverty reduction.

Poverty is not just reflected in hunger, lack of shelter and being sick and not being able to see a doctor. It is also evidenced by losing a child to illness brought about by unclean water; or by the inability of rural people to sustain their farm and livestock production due to lack of water. There are many other linkages between poverty and water. The urban poor often live in the midst of swamps of polluted waters breeding mosquito vectors of malaria and filariasis (or elephantiasis). These polluted waters are also the sources of transmission of various water borne diseases such as cholera, typhoid, polio and infectious hepatitis. The health consequences of these conditions result in loss of productivity, reduced incomes, and premature death that exacerbate poverty, and cause degradation of human dignity.

Both urban and rural poor often live in flood plains and are the most vulnerable to the impact of floods. The rural poor are often affected by water in other ways too. Children and women spend hours on end fetching water. The social and economic costs of such situations are enormous for the poor. The time spent fetching water from such sources adversely affects girl education and the economic productivity of women, for the cash equivalent of the time lost waiting for water adversely affects the productivity of the poor.

Inadequate water and unreliable rains often affect the viability of rural agriculture. In India and in parts of Kenya, rainwater harvesting has made a difference to the livelihood of the rural poor. The same can happen on a wider scale in Africa too. Indeed, it must be recognised that the contribution of water to economic activity and thus to improving the livelihoods of the poor is as important as its direct contribution to their health and dignity.

Based on such considerations, it is apparent that availability of water and the way waste water is disposed of have strong impacts on the NEPAD agenda for poverty reduction.

Health

The link between water and health is particularly clear. The first of the health objectives in the NEPAD program is to strengthen programs for containing communicable diseases. Safe water supplies can help achieve these goals.

Availability of enough safe water to meet the basic human needs is amongst the first prerequisite for promoting the health of all. The WHO has suggested a figure of 20 litres per person per day as the amount of safe drinking water needed to meet basic human needs.

On the negative side, the incidence of the water-related vector-borne diseases appears to be increasing. Of them, malaria is the most widespread. According to the World Bank, it results in over 900,000 deaths and up to 450 million cases annually in Africa, with children and pregnant women being the most vulnerable. Apart from HIV/AIDS, malaria is one of the most significant health problems in Africa, with enormous economic and social consequences. It is believed to account for an estimated US$1.7 billion annually in treatment and lost productivity. Construction projects often increase the population of the mosquito carriers of the disease, as they increate pools of water where they breed. Open drains and roof gutters often provide good sites for mosquito breeding.

Water projects can have beneficial side benefits. An example of this can be found in Ghana where a dam was constructed at a place called Kpong to produce tail waterpower downstream of the main Akosombo hydroelectric power project site. The resulting impoundment flooded rapids that used to serve as breeding grounds for the blackfly, the vector for riverblindness, or onchocerchiasis. This vector breeds in fast flowing waters. So the rapids at Kpong were good breeding grounds for the vector of the disease, and victims of the disease used to abound in the area some forty years ago. However, now, with the flooding of the rapids, the area is free of this disease.

Riverblindness is not just a health hazard in Africa. It is also an economic hazard. It affects Africa's rural communities. In the past, rural people have abandoned large tracts of fertile agricultural lands for fear of being infected by the disease. The impact of this disease on poverty and on the rural economy has been enormous since 80 percent of Africa's 600 million people depend upon farming for their livelihoods. The collaborative approach to the eradication of this disease has been one of the successes of the integrated

approach to problem solving in Africa.

Some 25 million hectares of land have been made safe for cultivation and resettlement in ten West African countries since a control program for the disease was launched in 1974. This has made possible the feeding of 17 million more people. A second phase that will involve 19 more countries in Africa is expected to help wipe out the disease from Africa by 2010. The eradication program involves a partnership made up of some 30 African countries, a pharmaceutical company, 12 non-governmental organizations (NGO's), 27 donors, and the four sponsoring agencies. The sponsoring agencies are the World Bank, the World Health Organization (WHO), the United Nations Development Program (UNDP) and the Food and Agricultural Organization (FAO).

A significant water-based disease discussed earlier under general infrastructure is bilharzias which may occur on a large scale in connection with the construction of dams and related irrigation schemes. This aspect can only be addressed by ensuring provision of safe water and sanitation to affected communities, buttressed by hygiene education of the public. Table 1 gives examples of communicable diseases associated with water.

Table 1: Examples of Communicable Diseases Associated with Water

Category	**Description**	**Examples**
Water-Borne Disease	These are diarrheal diseases transmitted through water and food that is contaminated by human, animal or chemical wastes (such as nitrates and pesticides). They spread easily where proper sanitation facilities are lacking	Cholera Typhoid Shigellosis Polio Infectious hepatitis
Water-Related Vector-Borne Diseases	Transmitted by insects and other animals that breed and live in or near water	Malaria Yellow Fever Filariasis Riverblindness Sleeping Sickness
Water-Based Diseases	Transmitted by organisms that spend part of their life cycle in water and another part as parasites of animals	Guinea worm Bilharzia
Water-Scarce (or Water-	Transmitted when too little water is available	Trachoma

Washed) Diseases	for washing hands and for personal hygiene. They thrive where fresh water is scarce and sanitation is poor.	Leprosy Tetanus Diphtheria

The general conclusion from the above is that adequate water and improved sanitation are essential for the control of certain communicable diseases, notably the water-born, water-based, and water-scarce diseases. On the other hand, engineering construction works associated with some of the anticipated actions under NEPAD could create conditions for increasing the incidence of certain communicable diseases that have far reaching social and economic consequences, notably the water-based and the water-related vector-born diseases. Hence, proper balance and attention need to be paid to water in the implementation of various aspects of the NEPAD program if the health objectives of NEPAD are to be realized.

Environmental Initiative

Africa's environmental resources are considered to be among its most valuable assets. African forests alone are believed to contain 45 percent of all global biodiversity. Forest-related activities account for an estimated 10 percent of the GDP of 17 African nations. In counties like the Cameroon, Central African Republic, Cote d'Ivoire, Equatorial Guinea, Gabon, and Liberia, forest product are believed to account for over 10 percent of trade.

Due to considerations like these, the environmental initiative is of utmost importance in the NEPAD agenda. It has targeted the following eight sub-themes for priority intervention:

- Combating desertification
- Wetland conservation
- Invasive alien species
- Coastal management
- Global warming
- Cross-border conservation areas
- Environmental governance
- Financing

It is apparent that water resources and their management will be a critical element in these priority areas. This will include, but will not necessarily be limited to, making special allocation of water to meet environmental needs as well as using water resources management strategies that entail proper integration in the management of water, land, and forestry resources.

SOME CRITICAL WATER ISSUES FACING AFRICA

From the above review, it is clear that for much of the NEPAD agenda positive contributions can be made by water and the negative impacts of the development activities can be mitigated. For this to be achieved, the critical issues that face water in Africa need to be identified and addressed.

Water is one of the most valuable natural assets that Africa has. Viewed at the continental level and having regard to the average amount of water available per year per unit area on the continent, Africa appears to be endowed with abundant water resources. It has 17 rivers with a total estimated catchment area of over 100,000 km2, 160 lakes larger than 27 km2. It has vast wetlands and a limited but widespread groundwater resource. In addition, it has a huge potential for energy production through hydropower production.

This picture of water in Africa, is however deceptive because the distribution of water in Africa is uneven and unequal both in time and in location. While there are parts like Central Africa and the Congo region where there is abundant water, there are sub-regions and countries in Africa that are experiencing growing water scarcity. Moreover, there are natural and man-made challenges that make it difficult to capture the inherent benefits and the full potential in Africa's water resources to support sustainable developments in Africa. There are aggravating factors that make it even more difficult to address these challenges. Yet the challenges need to be addressed adequately to pave the way for good stewardship of Africa's water resources, for protecting the gains of Africa's development from being wiped away by the destructive forces of water, for ensuring good demand and supply management of these resources, and for their efficient and equitable distribution to satisfy the rising and competing demands and uses anticipated in the NEPAD program.

The three top critical issues facing water in African are:

- High rainfall variability and climate change
- Managing the multiplicity of transboundary water basins
- Creating sustainable access to water

High Rainfall Variability and Climate Change

One of the biggest challenges in African water resources is the high degree of temporal and spatial variability and unpredictability of rainfall. In the dry countries like Namibia, the interval between rains can be long, and most of the annual rainfall occurs over a short period; in other countries the change in rainfall from one season to another can be high, with rainfall variation being as high as +/- 35 percent in some cases. Prolonged droughts are unpredictably followed by devastating floods. An example of this is in Mozambique which, along with Angola and Zambia became significantly drier over a 30-year period only to be hit by a devastating flood in the year 2000. It appears that the drier the country or sub-region, the higher the rainfall variability in time and quantity. Thus the drier parts of Ethiopia experience drought every four years. In the desert areas, the coefficient of

rainfall variation can be as high as 200%; in the semi-arid regions, it is 40%; and in the humid areas, it is 5-31%. The drought risk is highest in the Sudano-Sahelian belt, and in Southern Africa.

These variations have high social and economic costs. In Zimbabwe, for instance, there appeared to be a correlation between rainfall variability and real GDP growth over the period of 1970 to 1993. The floods in Mozambique in the year 2000 had an immediate significant impact on the country's economy. For example, projected annual GDP growth rate for 2000 was 23% lower after the flood; and projected inflation increased by 44%. Table 2 shows the social and economic impacts of drought and floods in selected countries.

Table 2: Social and Economic Impacts of Climate and Rainfall Variability in Selected African Countries

Country	Event	Year	Impact
Ethiopia	Drought	1983/84	300,000 deaths
Southern Africa	Drought	1991/92	• 20 million affected • $2 billion relief
Zimbabwe	Drought	1991/92	• 45% decline in agricultural production • 11% decline in GDP • 62% decline in stock market • 9% decline in manufacturing • 15% reduction in power generation
Kenya and Tanzania	El Nino Rains	1998	• Infrastructure destroyed • Disease and economy-wide damage
Mozambique and Sudan	Floods	2000	• Deaths • Homes & infrastructure destroyed • Economy-wide shock

Source: David Grey (2001), World Bank

Overlain on this already challenging picture is the threat posed by climate change, already addressed above. An indication of the potential impact is gained from predictions for areas of West Africa which suggest that the probability of occurrence two successive years of drought could increase three fold.

Factors that exacerbate the impact of rainfall variability therefore include:

- Lack of cooperation within transboundary water basins
    - Lack of information: no early warning systems in place
    - Lack of engineering control options such as storage facilities

- Expansion of agriculture without integration of water, land and forestry management

- Producing watershed degradation, flashy rivers, and more floods and droughts

- Further impact of global climate change on rainfall variability

Multiplicity of Transboundary Water Basins

One of the legacies of Africa's colonial history is the multiplicity of transboundary water basins in the region. Virtually every Sub-Saharan African country, plus Egypt, shares at least one international river basin. There are about 80 international water basins in Africa. There are up to ten countries per basin and many basins per country, one extreme case being Guinea which has 12 international rivers. For some downstream countries, very high percentages of total flows originate from outside their boundaries. A typical example is Egypt, with almost all of its total flow originating from outside its borders. With Mauritania and Botswana, the corresponding figures are 95 and 94, respectively. Table 3 gives information on the six major international water basins in Africa.

Table 3: Major Transboundary Water Basins in Africa

Name of Basin	Countries within Basin	Countries in Basin	Existence of Basin Organization
Nile Basin	10	Burundi, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Uganda, Zaire	Yes
Congo Basin	9	Angola, Burundi, Cameroon, Central African Republic, Congo, Rwanda, Tanzania, Zaire, Zambia	
Niger Basin	9	Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Guinea, Mali, Niger, Nigeria	Yes
Zambezi Basin	8	Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, Zimbabwe	
Lake Chad Basin	8	Algeria, Cameroon, Central African Republic, Chad, Libya, Niger, Nigeria, Sudan	Yes
Volta Basin	6	Benin, Burkina Faso, Cote d'Ivoire, Ghana, Mali	No

Adapted from presentation by David Grey, World Bank

Since it is now generally held that water resources management is best done at the basin level, it follows that the situation in Africa calls for cooperation between countries with shared water basins. Yet very few water basin organizations exist in Africa for this purpose and even where they do, they often lack the resources to manage effectively. The paucity of cooperation within such basin organizations results in reduced early warning

capacity, increased risk of vulnerability to flooding, reduced water availability, especially for downstream countries.

Properly resourced basin organizations would have several benefits. They can ensure enhanced monitoring and early warning; they provide opportunities for information and risk sharing; they facilitate pooling of technical and financial resources, thereby reducing the burden on individual countries and they make it possible also to plan at an appropriate scale.
They also allow for joint mitigation and economic development programs to maximize the benefits inherent in basin-wide management of water resources. It is noteworthy that the measures that are made possible through inter-country cooperation among countries with common shared water basins are, basically, elements of IWRM.

Creating Sustainable Access to Water

One of the major challenges facing Africa today is how to make up the deficiencies in creating sustainable access to water for drinking water supply and sanitation, agriculture and food security, and environmental sustainability.

Access to Water for Drinking Supply and Sanitation: It is generally known that water supply and sanitation have a significant impact on health and labour productivity. Rural water supply, sanitation, and health education have significant impacts on infant and child mortality, female education, and economic productivity of rural women.

Yet, according to WHO's global water supply and sanitation assessment report for 2000, Africa has the lowest total water supply coverage of any region in the world. Only 62 percent of its population has access to improved water supply. Urban coverage is estimated to be 85 percent compared with the rural coverage of 47 percent. Sanitation coverage is also poor. Only 60 percent of Africa's total population has access to improved sanitation services. Urban coverage is reported to be 84 percent compared with a rural coverage of 45 percent.

Access to urban services remained the same over the 1990s. In contrast, rural water supply coverage appears to have increased slightly while rural sanitation coverage fell. In absolute terms, 135 million people are reported to have gained access to improved water supply in Africa during 1990-2000. The majority of these (87 million) were in urban areas. For sanitation, 98 million people gained access to improved sanitation services during the same period, the vast majority (84 million) living in urban areas.

The target set in The Africa Water Vision is to reduce the proportion of African people without access to safe and adequate water supply by 75 percent by the year 2015. The global target is lower; it is aimed at reducing the figure only by 50 percent by 2015.

Given the fact that the African population is expected to increase by about 65 percent over the next 25 years, meeting even the global target for coverage by the year 2015 is a major challenge. In the urban areas, an additional 204 million people must be supplied with safe drinking water supply. In the rural areas, an additional 194 million people will have to be provided with access to water to meet the global target for 2015. On the whole, a total of 400 million people will need to be provided with access to improved water supply go meet the 2015 global target.

Africa has two options: it either has to revise its targets or it must come up with innovative and efficient approaches. Similar options face the sanitation sector. This is the challenge facing the creation of access to water supply and sanitation. There is an even greater challenge in ensuring reliability of the services that already exist.

Access to Water for Agriculture and Food Security: As noted earlier, water is a critical and limiting resource in agriculture and food security. Yet, with the exception of the humid regions of Central and coastal West Africa, there is a growing scarcity of water in almost all Africa. In North Africa, water resources for agriculture are already over-taxed. This is particularly true of groundwater resources that have been severely over-exploited, resulting in seawater intrusion in some areas. Even here, it is believed that there is scope for a potential expansion of irrigation by about 30 percent. The scope for expansion could be as much as 300 percent in sub-Saharan Africa where irrigation is responsible for only about 9 percent of the crops produced, compared to about 33 percent in North Africa. In the humid and sub-humid areas water is more abundant, and there is an estimated 85 percent of the irrigation potential that remains untapped. The existence of this potential does not necessarily mean that it is going to be possible to create the needed access to water to meet the needs for agriculture and food security. Among the challenges to providing access to water for agriculture are the following:

- Rapid rate of increase in demand for food production in response to the high rate of population growth rate in Africa, which is estimated to be the highest in the world
- Inefficiency of existing irrigation systems, with some having an estimated wastage of as much as 60 percent of pumped water
- Climate change and the high temporal and spatial variability of rainfall in Africa, inadequate facilities for predicting the changes coupled with limited capacity to fund the costs of adaptation needed
- Competing demands from growing municipal and industrial sectors that are likely to be intensified as a result of the NEPAD program
- The high demands of water by the agricultural sector relative to municipal and industrial demands; agriculture uses as much as 80 percent of allocated water

These challenges will have to be overcome if sustained access to water for agriculture and food security is to be achieved to support the African target for agricultural growth which is about 4 percent per annum during 1990-2020,as well as the target for food security which is set at 80 percent of the African population by 2015.

Access to Water for Environmental Sustainability: Sustainable development depends upon three key factors, namely environmental protection, social development, and economic growth and development. Of these, the critical and limiting factor is environmental protection. The life supporting environmental resources in Africa include its soils, lands, forests, wetlands, and aquatic and terrestrial ecosystems; it also includes its coastal waters, as well as its biodiversity. These are the sources of food, water and the oxygen we breathe. Since the environmental sustainability depends upon some of the water produced by the environment itself, enough water needs to be left for the sustainability of the environment. However, given the increasing demands on water for various components of development, it is easy for water exploitation to exceed the threshold for environmental sustainability to the detriment of our survival. The challenge is to determine this threshold and leave behind enough water in the environment to meet the minimum needs for environmental sustainability.

ADDRESSING THE CRITICAL WATER ISSUES

The African water challenges discussed above appear to fall into two categories. These are challenges associated with water resource management, and challenges associated with the delivery of water services at different levels of society. Rainfall variability and climate change fall under the first category.

Rainfall Variability and Climate Change

Rainfall variability is a natural phenomenon driven by complex natural forces that are not well understood or easily predicted and now exacerbated by climate change. They have a ripple effect downstream, affecting planning for such services as water supplies and agricultural production; they also give rise to risks of flooding and drought. Their key characteristic is uncertainty. Consequently, strategies for risk management are applicable to managing the challenges related to rainfall variability and climate change.

Traditionally, risk management has been based on quantitative links between probability and a hazard event like drought or floods, and the cost of the consequences of this event has typically been expressed in monetary terms. A new approach to managing water risks has been proposed based on the view that risk is a socially defined concept, and that more attention needs to be paid to instruments and institutions which allow individuals and communities to be meaningfully involved in expressing their own risk mitigation preferences. The use of the physical sciences and structural approached to address water risk management needs to be complemented by thinking from the perspective of economic efficiency. This framework is basically the IWRM approach

Within this framework, certain structural measures could be used for mitigating the risks of rainfall variability. Foremost among them is integrated management of land, forests and water. Water-specific measures may include the use of storage reservoirs and ground water storage. It is to be noted, however, that in view of the high rainfall variability and

the high concentration of total annual rainfall within a short period of time in some regions, structural solutions involving the use of dams can be highly expensive. Moreover, they can be technically complex. Africa is handicapped in both respects, in view of the level of poverty and inadequacy of technical personnel in the region. Long-range forecasting, based on long-term meteorological data have proved most helpful in advanced countries, and needs to be pursued vigorously in Africa.

Non-structural approaches that have been advocated include cooperation between countries and sub-regions for watershed management and for wetlands conservation. Also important is policy reform, including the creation of incentives for intensive farming, land-use zoning, pricing and economic incentives.

The scope and origins of rainfall variability and climate change fall beyond single countries and even beyond single water basins. Consequently, addressing them, calls for cooperation between countries; and the sustainability of such cooperation requires a mutually acceptable system of water governance. The appropriate system of governance may be best located at a level that is covered by the scale of the phenomena being governed. In all probability, this would be beyond the level of transboundary water basins. Hence, the level for this system of governance could be placed at the sub-regional level or at the regional level.

Multiplicity of Transboundary Water Basins

In contrast to rainfall variability and climate change that are driven mainly by natural forces, the existence of a multiplicity of transboundary water basins is driven only partly by natural phenomena. It is largely the result of arbitrary political boundaries created during the colonial history of Africa. It is, therefore, mainly a man-made phenomenon whose persistence as a challenge in water resources management is largely contingent upon political will and political choices.

One of the constraints to the resolution of this challenge is the lack of clarity about the benefits for cooperation within natural water basins that cut across national boundaries. Upstream countries might well ask about what they stand to gain through international cooperation within water basins. Hence a key measure in addressing this challenge should be the identification of the inherent mutual benefits of the basin approach to water resources management. It is important to demonstrate that international cooperation within natural water basin is not a zero sum game with winners and losers. It should be possible to show that, in most cases, it is a win-win game designed to bring improved development to all collaborating countries.

Options for addressing this challenge should therefore include awareness creation about the benefits of cooperation and the cost of alternative approaches to water resources management. Roundtables need to be held on the issue for civil society, political leaders, economic planners, as well as engineers. With so many transboundary water basins in

Africa, consideration should be given to the promotion of one or more transboundary water basin associations to facilitate exchange of experience.

Already there are a few transboundary water basin organizations in Africa, the most recent being the Nile Basin Initiative. Others are the Niger Basin Authority and the Lake Chad Basin Commission. A review of the experience with the existing basin organizations in the continent would provide lessons on what works and what does not. Such lessons could form the basis for the formulation of guidelines on the governance of transboundary water basins.

Regional integration in Africa could facilitate and strengthen transboundary water basin organizations. Conversely, transboundary water basin organizations could serve as an instrument for sub-regional and regional integration. Hence, the challenge posed by the multiplicity of transboundary water basins is one whose resolution could have some beneficial side effects.

Access to Water for Drinking Water Supply and Sanitation

Africa has failed to achieve coverage targets for drinking water supply and sanitation for a long time. There are a number of reasons for this. One is simply that the expansion of services has not matched the rapid growth of population.

A particular challenge lies in the organizational arrangements, particularly in rural areas. In urban areas, municipal and industrial water service deliveries are usually combined and commercial uses can help support social needs. This is not the case in rural areas where such a combination is usually not feasible, save where water supply can be combined with agricultural water supply, to attain economies of scale, as well as institutional advantages, when the same personnel responsible for agricultural water supply also assume responsibility for rural water supply.

Perhaps the key constraint however is inadequate financing to support expansion and operation of services to both rural and urban poor. This is a factor linked to the current state of economic development in Africa which means that at both household and national level, there are simply inadequate resources to afford such services. Where some resources exist, as for example in the urban areas, mechanisms have been found to allow the extension of services to the urban poor. There are successful examples in which institutional strategies have been introduced to allow partnerships between utilities and small-scale independent community-based suppliers.

In most African countries, the challenge is to address the needs of the poor while sustaining services to economic sectors. A policy of providing free water supply to low income communities has recently been introduced in South Africa but is dependent on sufficient resources from the public budget which may limit its application in other African countries.

It is urgent for the financial framework for water services to be reviewed to identify their strengths and weaknesses so that recommendations for the way forward can be formulated.

Access to Water for Agriculture and Food Security

The water-related problems confronting agriculture can be divided into three groups:

- Human and institutional problems
- Natural resource-related problems
- Policy and technological problems

Human and institutional problems
The rapid growths in population and urbanization place immediate pressure on agriculture for increased production while at the same time creating new demands for water which might have to be reallocated from agricultural use.

Inadequate, technical, organisational and financial support for agriculture compounds the problems and prevents appropriate strategies from being devised and implemented.

Rapid urbanization should offer market opportunities for agriculture but often this does not occur. It is increasingly being recognized that effective management would play a significant role in addressing the problems created by the high rate of population growth.

Natural resource- related problems
Although African countries currently use only a small proportion of their water resources, rapid growth may exacerbate water scarcity in Africa. Other challenges to be addressed include:

- High rainfall variability and climate change
- Low ground water potential
- Low aquifer recharge
- Water quality deterioration

These phenomena should simply be taken into consideration during the agricultural planning and implementation process.

Policy and technological problems
For investment in agricultural improvement to be sustainable, market access and fair terms of trade are essential. Inadequate access to both local and international markets for trading African agricultural products is an important constraint to effectively developing water for agriculture. There are however many immediate problems which would have to be addressed before any improvement in market access could be exploited. These include:

- The very low efficiencies of water use in irrigation, estimated to be only 20-40 percent
- Perverse incentives inherent in common pricing systems for irrigation water based on irrigated area rather than water volumes
- Low prices of agricultural products, especially the cereals
- High and increasing construction costs of irrigation systems, now ranging between $10,000.00 and $20,000.00 per hectare for large scale systems, and $7,200.00 for medium sized systems
- Tendency to focus on self-sufficiency in food rather than on food security

Possible strategies for addressing these issues include the following:

- Use of price incentives to induce more efficient use of irrigation water
- Development of additional incentives for water conservation
- Diversifying technology and approaches to include options like:
  - Rainwater harvesting
  - Use of low-technology systems such as the treadle pump for vegetable cultivation
  - Promoting aquaculture
  - Operationalising virtual water concepts
  - Promoting basin level cooperation and inter-basin water transfers
  - Involving water user associations in decision making
  - Introducing good water governance systems at all levels

The NEPAD land and water initiative is a key element of the agriculture and food security programme and particular effort must be made to ensure that water management professionals engage with their agricultural counterparts in this process.

EMERGING CROSS-CUTTING ISSUES

A number of cross-cutting issues appear to be emerging from the review of the options for addressing the various critical water issues. The four key issues are:

- Water governance
- Financing
- Capacity Building
- Performance monitoring, assessment and reporting

Other cross-cutting issues identified are:

- Paucity of technical information
- Awareness raising
- Partnerships

The top three cross-cutting issues are briefly discussed below.

Water Governance

The challenges associated with climate change, rainfall variability and multiplicity of transboundary water basins appear to be wide in scope, scale and focus. In contrast, the challenges associated with the delivery of water services for the various purposes cited appear to be narrow in scale, focus, and scope. Nevertheless, all the challenges have one thing in common, namely, water governance.

By water governance, we mean the range of political, social, economic, and administrative systems that are in place to develop and manage water resources and the delivery of water services at different levels in society. Good water governance has well-defined properties. It is transparent, open, accountable, participatory, communicative, incentives-based and equitable. It is also coherent, efficient in terms of having low transactions costs, integrative, and ethical.

The challenges arising from the multiplicity of transboundary water basins cannot be adequately addressed unless there is a governance system in place at the water basin level through which countries within the shared water basins can manage their common water basin in a mutually acceptable way.

In much the same way, in addressing the challenges associated with the delivery of sustainable water services, water governance would again be required. However, this time, the focus for this governance would be narrower, and would occur at country level or within sub-units of countries, possibly down to the community level.

Thus water governance is required at several levels: within countries, at country levels, at national or multinational water basin levels, or beyond water basin levels. In fact, in water resources management and service delivery, there is always some form of water governance in place, whether it is formally created or it exists by default. The message here is that, rather than leaving water governance to chance, it should be intentionally established so that it could be designed to embody sound principles for sustainable water management.

The way forward on this is to design a series of dialogues or roundtable discussions on the subject, involving all stakeholders. A task force could be established to prepare a detailed program of work on water governance.

Financing

A common constraint in addressing the identified water issues above is how to mobilize adequate financing to implement the coping strategies. Inadequate financing is a limiting factor. For example, with adequate financial resources, lack of technical expertise could be overcome by procuring foreign technical staff or retaining skilled African

professionals. Similarly, the issue of inadequate technical information could also be overcome through the use of consultants.

Regrettably, due to Africa's current level of underdevelopment, there is a limited scope for raising the necessary capital from local financial markets and institutions. Public sources of financing are usually strained. The solution is to turn to external private and donor sources of financing or to turn to regional and international banks which are often not able to provide the long term financing required for payback periods of 30 years and more. This highlights the priority given by NEPAD to economic growth and integration in the global economy since this is the only way in the long term that access to finance can be assured.

The challenges of funding operational costs are just as great. While pricing systems must reflect the principle that affordability should not be a barrier to access to basic services, there is a need for water management institutions to have reliable streams of income. Cost recovery from water users is an important element in the financing mix which must be developed. Limited budgetary subsidies from government or external sources should be reserved in the first instance for targeted social purposes.

Even with such external sources of financing, government policies must be supportive whether to provide guarantees, including provision for contingent liabilities or to support the establishment of appropriate prices. For this to happen, governments, their political leaders economic planners and budget directors must have an awareness and an understanding of the importance of investing scarce national resources in water rather than elsewhere. So far, no systematic effort has been launched to create this awareness and understanding. An important first step is thus to engage such decision-makers and water professionals in dialogues and roundtable discussions.

A special challenge will be to finance global and regional "public goods" such as trans-boundary management of water resources and protection of the environment and biodiversity. Given Africa's extreme resource constraints, these matters which impact on international peace and security as well as on the international environmental heritage require specific funding mechanisms which reflect their global nature. The funding of adaptation to climate change induced by human activity should also be addressed through mechanisms which reflect the widely accepted principle that "the polluter must pay".

Capacity Building

Another emerging cross-cutting issue is the need to build up the capacity needed for the efficient discharge of the various functions in the water sector. This would entail a definition of the tasks to be performed, providing staff with the skills necessary for performing the tasks or, alternatively, recruiting staff already equipped with the necessary skills, and creating appropriate incentives for the acquired skills to be efficiently applied to the tasks on hand, lest the acquired skills should become atrophied through lack of use. The incentives should also be sufficient to prevent premature loss of the staff or brain drain.

For existing cadre of sector professionals, the required capacity building program may consist of a well-defined system of continuing education designed to bring such professionals up to date with advances and developments in their fields. The program may consist of seminars, short training courses, workshops, distance learning, and internet-based training programs offered on a sub-regional or regional basis.

In addition, consideration may be given to the introduction of innovative formal university courses designed to provide undergraduate degree courses in water resource management. Springing from such basic undergraduate courses, specialized postgraduate professional courses may be offered in water resources development and service delivery for agriculture, water supply and sanitation, and hydropower generation. The WaterNet initiative which is offering water related post-graduate training through cooperation between SADC universities is a good practical example of the way forward.

ROLE OF IWRM AND AFRICA WATER VISION IN SUSTAINABLE DEVELOPMENT

This review has shown clear two-way linkages between water and each of the development programs envisages in the NEPAD agenda. It is also clear that measures for addressing the water resource management issues critical to the success of the NEPAD goals are mostly elements of IWRM.

The importance of IWRM in NEPAD is not just to achieve integration of strategies and activities between sectors. Given that water is a critical resource for the success of each one of these development programs, it can be anticipated that there will be intense competition for the freely available water resources. This will be compounded by the lack of resources to develop the potentially available resources that require storage and transport; competition between countries for shared water resources will compound the challenges.

This makes it vital that adequate measures be taken to ensure that the socio-economic dividends from NEPAD are not washed away by inadequate attention to water resources management. It makes it imperative that there should be measures for proper stewardship of Africa's water resources, for judicious and equitable allocation of the existing supplies between the competing demands, and for proper sequencing of water use to minimise investment requirements and to permit re-use at minimum cost and safeguard adequate quantity and quality of water for the desired uses. In short, it calls for strict adherence to the principles and practice of IWRM.

Due attention should thus be paid to the Dublin Principles and to the salient features of IWRM. These include, but are not necessarily limited to, the pursuit of economic efficiency, equity (reflecting both fiscal equivalence and distributional aspects, especially the provision of adequate safety net for the poor), and environmental sustainability. Equally important is mainstreaming management at the lowest appropriate level, as well

as adequate participation, especially of women and the youth. Guidelines and practical instruments for using these principles have been assembled within the IWRM Tool Box. The hallmark of the Tool Box is a set of case studies that illustrate how the IWRM tools have been used in practice. The three pillars that underpin the Toolbox are:

- the enabling environment that includes policies, legislative framework, and incentive structure;
- institutional roles and arrangements for the enabling environment; and
- management instruments for use within the institutional framework

IWRM is being vigorously promoted by the global Water Partnership (GWP). It has already been embraced by IGWA and UNSIA. It has also been adopted as the framework for the implementation of the Africa Water Vision. As shown below, many of the priorities for action are the same as the actions envisaged under the Framework for Action for the Africa Water Vision. Thus, NEPAD can be viewed not only as an opportunity to for sustainable development in Africa, but also as an opportunity to demonstrate to development professionals and political leaders the relevance of water to sustainable development. Moreover, it is an opportunity and a peg on which to hang the promotion of IWRM and advance the implementation of the Africa Water Vision.

A WATER AGENDA FOR SUSTAINABLE DEVELOPMENT IN AFRICA: AN AFRICA POSITION AND PRIORITIES FOR ACTION

This paper has sought to show how water can contribute to the goals of NEPAD and, through that, to show how water can contribute to sustainable development in Africa. It has become apparent that water has a central and critical role in sustainable development, in general, and in the attainment of the NEPAD goals, in particular. In fact, water may be regarded as the lifeblood of sustainable development. It is to sustainable development what blood is to the human body. This is evidenced, in part, by the two-way links that exist between water and NEPAD's programmes. Even for those which do not require water as an input, water resources could be adversely affected unless appropriate actions are taken. This highlights the need for water resources development to be included in a coordinated and integrated approach to development and competing demands for water use. Without this, achievement of the goals of NEPAD will be undermined.

Certain critical and cross-cutting water issues have been identified. Measures for addressing some of these critical issues have been presented. In many cases, these turn out to be mainly the effective implementation of IWRM. These will also be complementary to programmes designed to address water service backlogs and to ensure the reliability and sustainability of economic water supply and sanitation services to urban and other commercial water users.

To ensure that water plays its proper role as an instrument for sustainable development and also as an instrument for regional integration, it is important that Africa should define a water agenda that is driven by its position on the key water issues it faces, and by its

priorities for action in pursuit of the NEPAD goals and the Africa Water Vision. These two aspects of Africa's water agenda are addressed next.

Africa Positions on Water

Fortunately, these broad conclusions are consistent with positions already adopted by the African water sector through instruments such as the African Water Vision and its Framework for Action..
It is proposed that, given the central and critical roles of water in sustainable development, and the two-way links that exist between water and the NEPAD goals, the positions on water listed below be recommended for adoption at this Conference.

1. Water is to be viewed as a cross-cutting issue to be mainstreamed within NEPAD and other development efforts at national, sub-regional and regional levels in pursuit of sustainable development

2. The Africa Water Vision and its framework for action are endorsed for use at all levels of water development and service provision in Africa

3. Policies, strategies, and projects in water resources management and development should be based on the principles of IWRM. To this end, Africa will adopt the following, among others:
    a. Management at the river basin level
    b. Management at the lowest appropriate level
    c. Demand-driven approaches
    d. Ownership and participation by all stakeholders, especially women and the youth
    e. Promotion of knowledge and information exchange aimed at institutional sustainability and conflict prevention

4. A high priority will be given to the establishment of sustainable and sufficient mechanisms for providing financial and technical support for meeting urgent and critical needs in water resources development and access to services for drinking water supply and sanitation, agriculture and food security, and environmental sustainability

5. Policies for mainstreaming gender balance, poverty reduction, and environmental sustainability in all aspects of water resources development and service provision will be pursued

6. A high priority will be given to global, regional and sub-regional public goods in water and mechanisms developed to support their achievement

7. A high priority will be given to the development and implementation of a program for awareness creation among civil society, political leaders and

decision makers about the indispensable role of water in development and poverty reduction

8. Participation by the private sector in water service provision will be supported provided that there are adequate safeguards, specifically for the interests of the poor and generally for the achievement of NEPAD's development goals

9. The key areas of focus in the medium term shall be as defined under the priorities for action

10. Political commitment will be promoted through the mechanism of the African Ministers Conference on Water, AMCOW.

Priorities for Action in Water

The basic spirit behind the priorities for action is that it is support for the broad NEPAD agenda that should serve as the key determinant for prioritizing regional and sub-regional actions in the water sector in Africa. With this in mind, the proposed agenda is constrained by considerations of sustainability of Africa's water resources, protection of developments from water-related extreme events, access to water to meet basic human needs, and environmental sustainability.

It is hoped these priorities for action in the water sector would be considered by African water Ministers and revised to ensure harmony with their statement so that we end up with a single agenda for water to be pursued by all in Africa. This requires also that the final version of the priorities for action would have been discussed with Africa's development partners.

The proposed priorities for action are as presented below:

1. Improving water governance at regional, sub-regional, and at transboundary water basin levels

2. Establishing sustainable organisations and mechanisms for improved financing and cost-recovery in water resources management, development, allocation, and service delivery

3. Promoting improved water resources management and the institutionalization of integrated land, forestry and water resources management action plans at sub-regional level, transboundary water basin levels, and at national levels

4. Promoting the definition of property and use rights regimes for water within countries and between transboundary water basins

5. Improving African capacity for IWRM, focusing of water governance and access to service

6. Improving the technical knowledge base at regional and sub-regional levels for water resources management and access to water services

7. Improving access to water supply and sanitation services

8. Instituting a system for performance monitoring, assessment, and reporting on all aspects of the agreed priorities for action

9. Optimising the contribution of water management to food security and agriculture based trade and development

10. Developing the contribution of water infrastructure to energy generation

THE WAY FORWARD

NEPAD is clearly a ground-breaking development for Africa. It is a development with great prospects for large socio-economic dividends. Failure is not an option for the realization of these dividends. However, their realization is contingent upon the type of attention that will be paid to water in the NEPAD agenda. IWRM is seen as the key to ensuring that water plays its proper role in the attainment of the NEPAD agenda. In recognition of this, an African position on water has been defined. In addition, a number of priority actions have been identified. It is hoped that for each priority item, a task force would be established at Africa level to formulate a program of action, including the critical work of sharing the vision more widely amongst water professionals and their counterparts in economic planning and other sectors. The program of action should lead to the formulation of policies and strategies to be promoted for each topic. If these modest goals could be achieved, Africa would have good cause to be hopeful for the future.