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## Bridging the Water Sector Infrastructure Gap Through Capacity Development



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In a context where the uneven distribution of water resources and rainfall pattern variability are worsened by the impacts of climate change, and where unprecedented population growth is leading to a sharp rise in water demand, increasing water security through the development of water infrastructure has become paramount for Africa.

While the continent boasts quite a large number of basins, lakes and rivers, many countries are not leveraging the full potential of their surface and ground water resources to meet growing demands in water, energy and food.

Even though lack of investment remains the biggest issue to overcome, the general lack of capacity to develop water infrastructure and address sector

challenges remains one of the most important stumbling blocks preventing the African water sector to thrive.

### **Potential untapped, needs unmet**

As a whole, the continent only utilises four per cent<sup>1</sup> of its water resources: current infrastructure only allows for the irrigation of seven per cent of arable lands compared to a global average of 20 per cent - and only eight per cent of the hydropower potential has been developed. Yet there is paradox in the fact that the continent imports a significant share of its needs in cereals, when it could be grown at home if irrigation areas were further expanded. Meanwhile, the energy demand has increased sharply due to a decade of steady growth, but most of it is unmet because the energy sector is unable to catch up, a situation that could be avoided given the continent's enormous hydropower potential.

In addition, in the few river basins where water is intensively used, water allocation becomes a source of conflict as in the Nile River Basin.

1. FAO, AQUASTAT ([www.fao.org/nr/water/aquastat/main/index.stm](http://www.fao.org/nr/water/aquastat/main/index.stm))  
2. 5% from 2003 to 2012

Africa also needs to better address water threats. For one, the industrial and domestic pollution of water resources has not been adequately dealt with and is jeopardising citizens' health and the quality of ecosystems, especially around big cities. According to the Intergovernmental Panel on Climate Change, global warming will increase droughts and floods on the continent. This is a situation African states are not well prepared to handle given their lack of capacity to manage and reduce climate-related disaster risks.

The inadequate development of water resources is also reflected in Africa's performance in meeting the Millennium Development Goals (MDG) for water supply and sanitation. By 2015, 68 per cent of the population had access to drinking water and 30 per



*A workshop on sanitation in Ghana*

cent to improved sanitation facilities in Sub-Saharan Africa. Although access to water resources varies significantly per country, Northern Africa, for example, had a rate of access to improved drinking water of 93 per cent and of 89 per cent to improved sanitation- the average for Sub-Saharan Africa falls far below the targets of 76 per cent for access to drinking water, and of 62 per cent for access to sanitation by 2015.

It is estimated that about \$20 billion should be invested every year in the water sector to bridge the

#### **Supporting the communes in handling water supply and sanitation in Northern Benin**

PROTOS Benin, a Belgian NGO, is currently providing support to the communes of Atacora and Donga departments in developing and managing water supply and sanitation infrastructure.

The project aims to develop the capacity of the communes so that they can raise funds, plan investments, select the consultancies and firms, control studies and works, and delegate to the private sector the responsibility of operation and maintenance. The objective is also to build the capacity of the emerging private sector, so that firms in charge of operation and maintenance establish sustainable financial models and quality management systems.

A team of technical assistants based in Natitingou develops training for the communal staff, elective representatives and private sector employees. They focus mainly on a "learning by doing" process through competitive call for proposals: the best communal projects are financed, and communes are supported all along the design and implementation of the project by the technical assistants.

The project team also assists local governments in selecting and controlling firms that will operate and maintain the communal infrastructure. This three and a half year project amounts to €1.8 million and is funded by AWF and ICCO (Interchurch Organization for Cooperation, Netherlands) with a significant contribution from the communes, representing 30 per cent of the infrastructure costs.

infrastructure gap, with investments coming from both public and private sectors. While funding is a problem, the capacity to manage investments is uneven across the continent. In fragile states in particular, post conflict conditions and governance issues reduce governments' ability to absorb investments. The private sector, on the other hand, is increasingly more interested and involved in the operation and maintenance of water infrastructure, but remains unstructured and inexperienced.

Addressing these challenges will require exploring various solutions. Looking for new options will amount to little without developing the capacity of water sector organisations across the continent to overcome these challenges. It is also important for the focus to remain on solving issues of inadequate institutional environment, the lack of cooperative frameworks on transboundary river basins and aquifers, the insufficient human and financial resources, and the lack of reliable information systems, among others.

### **How AWF Fosters Capacity Development in the Water Sector**

The African Water Facility (AWF) is a financial instrument created to leverage investment through project preparation activities. It is also designed to promote water knowledge and improve water governance; two necessary preconditions for projects to be sustainable and adequately managed. The AWF is committed to supporting capacity building activities as much as possible, and strives for projects to be successful in the long-term, as well as to attract investments and manage them appropriately.

At the end of 2013, a total of 34 out of the 84 projects supported by the AWF were either entirely dedicated to capacity development, or include a capacity development component. These projects have wide reach in 16 African countries and in 10 transboundary river basin organisations or regional economic communities.

Capacity development requires a comprehensive approach targeting all the water sector organisations and covering a wide range of assistance modalities. AWF helps develop the capacities of governments, transboundary organisations, local institutions, public

utilities, non-governmental organisations and the private sector. It also intervenes at five different levels: strengthening institutional frameworks, building human resources, assisting in mobilising funds, improving information systems, and structuring the private sector, mainly through a demand-driven approach.

### **Strengthening Institutional Frameworks**

To enable the development of the water sector, the AWF helps reinforce institutional frameworks. In the Central African Republic, for example, the AWF offered a €2 million grant to support the Government in promoting water sector reforms. This project has improved the regulatory framework, prepared the water sector institutions' statutes, developed a water supply and sanitation investment plan, started the rehabilitation of the hydro-meteorological network, and implemented a national information system.



*A workshop on sanitation in Ghana*

In addition, the AWF supports a wide range of river basin organisations and regional economic communities in view of establishing transboundary cooperative agreements. In 2007 the Lake Chad Basin Commission, received a €890,000 grant from the AWF to assess the national legal and institutional frameworks of its member countries, to draft the Lake

Chad Basin Transboundary Water Chart, and to support the national validation processes. The Chart is currently under ratification by the six member states.

AWF also funded the Sahara and Sahel Observatory to set-up a cooperative framework between the countries sharing the Illiumeden, Taoudeni and Tanezrouft aquifers. The Aquifers are shared by Algeria, Benin, Burkina Faso, Mali, Mauritania, Niger, and Nigeria, and cover an area of 2.5 million km<sup>2</sup>. The framework was eventually formalised in March 2014.

### **Building Human Resources**

The lack of experienced and knowledgeable staff is a common challenge faced by water institutions, but can be overcome through adequate training. The AWF supports skill building through a wide set of modalities, ranging from tailored academic trainings to learning-by-doing, depending on the needs identified. After a decentralisation process took place in Benin in 1999, communes inherited the responsibility of managing water supply and sanitation. In October 2012, PROTOS Benin (NGO), received €1 million grant to support the communes of Atakora and Donga departments to handle the planning, construction, operation and maintenance of the water supply and sanitation facilities. PROTOS Benin has since been providing tailored training to communal staff and elected representatives. Through calls for proposals, PROTOS also selects and subsidises communal projects, and provides technical assistance to the communes throughout project implementation. This learning-by-doing approach addresses the whole project management chain: mobilising funds in a competitive environment, preparing projects, controlling works, organising operation and maintenance activities.

In 2008, AWF also funded a capacity building project to decentralise the monitoring and evaluation activities of water resources in Burkina Faso. With this project, 18 technicians and 23 technical officers, specifically selected by the Government, benefitted from up to two year's academic training leading to a degree. They have since been recruited for various positions in decentralised sections of the country's Ministry of Agriculture, Water and Fisheries.

As a specific support to fragile states, AWF has provided funding for the Fondation 2iE – an international water and environmental engineering school based in Burkina Faso – for the school to offer scholarships and cover education fees for students hailing from fragile states. A total of 88 Bachelors, 63 Masters of Science, and 42 specialists are being trained, bringing new talents into the African water sector labor market.



*Graduate ceremony; Fondation 2iE is a water and environmental engineering school based in Burkina Faso*

### **Assisting in Mobilising Funds**

The coherent and comprehensive assessment of the investment needs in the water sector is indispensable to convince and mobilise donors.



*Information systems; Piezometer monitoring; Morocco*

As at December 2014, AWF had successfully supported 36 projects aimed at developing investments plans or preparing infrastructure projects. The Government of Mozambique received a €468 000 grant from the AWF on December 2006 to support the development of the *National Rural Water and Sanitation Programme* which leveraged significant follow-up investment, with over € 118 million mobilised within a few years. Similarly, the *Seychelles Water Supply Master Plan*, also financed by the AWF, helped Public Utilities Corporation secure €103 million to better manage water demand and meet water needs for the whole country.

### **Improving Knowledge to Inform Decision Makers**

Informed decision making requires effective information, as well as monitoring and evaluation (M&E) systems. From 2011 to 2014, the AWF helped

Malawi develop sub-sector M&E systems with a focus on water resources, water supply, sanitation and irrigation. Malawi also developed a central M&E database, through a participatory approach meant to ensuring ownership of the system. In West Africa, the Niger Basin Authority received €1.2 million in 2010 to reinforce its hydrological monitoring network, upgrade national and basin wide databases, and train national teams in charge of the system.

Given the added value of partnerships for education, the AWF has been fostering links between universities and development institutions by systematically including internships and PhD's in projects, and involving universities. An example of such initiatives is how the AWF presented the *Centre Béninois de Recherche Scientifique et Technique* with the opportunity to monitor the evolution of a Benin-based AWF project involving the management of urban sludge of Grand Nokoué. Researchers from the Center will have the opportunity to draw lessons from this pilot experience combining sanitation and public-private partnership (PPP).

### **Structuring the Private Sector**

Capacity building is not only about public institutions. The private sector plays an important role in the operation and maintenance of water supply facilities. Countries are increasingly delegating water facility operation to firms, and informal enterprises have a pivotal function in waste management, especially in urban areas. The AWF understands the immense value of enabling the private sector. The AWF has in recent years increased its support to projects that formalise the involvement of the private sector in the urban waste management value chain. For example, an AWF

urban waste management project for the city of Ziguinchor, in Senegal, approved in 2013, ensures that small enterprises in charge of sludge transport will undergo training, accrediting and control.

## Results and Focus Going Forward

By December 2014, the AWF had supported the creation of three transboundary basin cooperative frameworks, and assisted 10 transboundary river basin organisations through various capacity development activities. In addition, the AWF has funded the training of 234 graduate and under-graduate students, the implementation of nine national or regional M&E or information systems, the rehabilitation of three hydro-meteorological networks on transboundary basins.

In 2011, the AWF revised its strategy and devised a mid-term plan, where the focus will be on activities that can increase the investments needed to effectively bridge the investment gap for the successful development of the African water sector. In 2014, the AWF reached a total of €1.2 billion in resources mobilised since its inception. Therefore, capacity

development will and must remain a top priority for the AWF to enable countries and organisations absorb this significant level of funding. ■

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