

Strengthening the capacity of African stakeholders to achieve Sustainable Development Goal 6 amidst Climate Change

INTRODUCTION

Water-related risks and Climate Change threaten African societies and economies

To help African countries achieve the Sustainable Development Goals (SDGs), international organisations such as the Africa Progress Panel,¹ and the African Union² stress the need to accelerate investments in agriculture, fishing, energy, and other sectors. However, those sectors cannot function without water. Water crises, one of the five greatest environmental risks the world is facing today, are already affecting several African countries, reducing food production and increasing hunger.³ To achieve SDG 6 amidst Climate Change, it is crucial to strengthen the capacity of African stakeholders to manage water resources sustainably, while ensuring the protection and restoration of ecosystems which have a vital role in the hydrological cycle. These are pre-requisites for economic development and social well-being within the constraints that Climate Change imposes. This policy brief focuses primarily on capacity development for water resource management.

AfriAlliance⁴ combined a top-down approach (policy analysis) and a bottom up approach (workshops, surveys and interviews) to analyse the specific capacity needs, in view of Climate Change, of African water practitioners from three key stakeholder groups involved in water management, namely water utilities [WUs], river basin organisations [RBOs], and civil society organisations [CSOs]. A better understanding of how they (and governmental bodies in charge of water policies design, implementation) perceive the effects of Climate Change on their organisations' activities, and what barriers and bottlenecks they face, is a crucial first step for strengthening their capacity to fulfil their mandates in the context of Climate Change.

Given the geographical, climatic and cultural diversity in Africa, achieving SDGs 6 and 13 depends on sound understanding of what the general capacity needs identified at policy level actually consist of at local level, and on collaboration and partnerships (SDG 17).



Sustainable Development Goal 6 aims to ensure universal access to water for all by 2030, to protect water-related ecosystems and to enhance relevant international cooperation. Translating this agenda to achieve water security into effective actions on the ground requires understanding the concrete capacity needs that water managers and users have, especially in the context of Climate Change.

KEY MESSAGES

1. Collaboration to achieve SDGs 6 and 13 depends on a sound understanding of what the general capacity needs identified at policy level actually consist of at local level.
2. Strengthening the capacity of water managing organisations to envision how Climate Change will enable them to design (and implement) strategies for water security.
3. Information on the conditions of water resources and how they may be affected by Climate Change is needed to implement Integrated Water Resources Management (IWRM).
4. In order to participate in IWRM, communities need to understand climate and water issues and support the search for solutions for the problems they face.
5. Good governance is crucial to ensure water security amidst Climate Change.
6. Strengthening capacity at different levels to achieve SDG6 amidst Climate Change (SDG13) requires collaboration and partnerships (SDG17).

Dealing with day-to-day water management leaves little room to plan for Climate Change

The AfriAlliance research results indicate that many African water practitioners have not been able to identify and mitigate the challenges that Climate Change poses for their activities. Therefore, they have not yet devised adaptation strategies. For example, water utilities, already affected by low human and technical capacity, are overwhelmed by factors external to their operations and which they cannot control but that reduce their ability to fulfil their mandate. Reduced budgets and loss of water revenues have contributed to the poor state of water infrastructure in many African countries,⁵ which is worsened by the effects of weather extremes and increased maintenance costs. Pollution of water sources, resulting from poor regulation and enforcement, reduces the efficiency of water treatment. Water conflicts, political instability, poverty, migration, and poor coordination among sectoral polices reduce their ability to plan how to allocate resources to meet the increasing demand for water. [Strengthening the capacity of water managing organisations to identify solutions for their current needs and to envision how Climate Change will affect specific activities will enable them to design their strategies for water security under Climate Change.](#) Box 1 illustrates ongoing work to strengthen the individual and institutional capacity of water-related sectors in Southern Africa.

Implementing IWRM is difficult without information on water and climate

Concerns about the effects that Climate Change may have - or is already having - on sustainable water management and on access to water and sanitation in Africa has grown over the past years. However, this has not resulted in the implementation of coherent responses to meeting SDG 6. An IWRM approach seeks to involve decision-makers and stakeholders across sectors as well as across local, national and regional scales in deciding how to develop and manage water resources in order to achieve social and economic well-being without compromising the environment. However, respondents from the three stakeholders groups (WUs, RBOs and CSOs) highlighted that the lack of information about local weather, climate patterns and the conditions of water resources limits their capacity to manage water supply efficiently. The limitations are even greater when planning how to address the challenges of Climate Change. Consistent with this, the 2017 Africa Sustainable Development Report¹ concluded that, for the African continent, there is limited information for only 2 of the 11 indicators for SDG 6 (water and sanitation), while there is no information for any of the 9 indicators for SDG 13 (Climate Change adaptation).

Capacity needs in Southern Africa

BOX 1

Countries in the Southern African Development Community (SADC) are fully engaged in global and regional processes for water management and Climate Change adaptation. With 15 transboundary river basins in the region, water is seen as a catalyst for reaching goals on development, regional integration, poverty eradication, peace and stability. The SADC region is characterized by poverty and limited capacity to cope with weather extremes; limited technical capabilities and weak scientific understanding of water-related aspects, and poor coordination among current capacity development initiatives.

While on-going efforts focus on strengthening the capacity in the SADC region to generate knowledge and deliver products and outputs in the form of graduates and trainees, there is a pressing need to institutionalise feedback loops and scale-up relevant changes in knowledge, practices and policies. Bridging gaps between the supply side (represented by capacity development initiatives) and the demand side (those implementing IWRM and findings from various initiatives) will increase relevance and effectiveness of initiatives. Working with local, national, regional partners, WaterNet has identified, among other, the following needs for strengthening the capacity of individuals and institutions in the water-related sectors in the SADC region:

- Increase the relevance and involvement of stakeholders in solving water problems through enhanced promotion and understanding of IWRM
- Enhance and sustain regional cooperation and research capabilities for developing water solutions in the SADC region
- Provision of problem-solving and action-oriented post graduate educational programmes and short professional training courses.

Knowledge and participation to face Day Zero: The City of Cape Town's Water Crisis

BOX 2

In early 2018, Cape Town experienced the effects of the worst drought in its history. With the urgency of the situation, and the time and high cost involved to implement alternatives for water supply (such as building a desalination plant), the City had to find ways to speed up the procurement process in time to avoid reaching "Day Zero" (when water pipes run dry). Re-classifying the drought from provincial to national disaster made funds available and made the National Executive responsible for coordinating disaster response. The local government implemented demand management schemes to reduce the residents' daily water consumption. Stricter water restrictions were introduced as stored water in reservoirs decreased. The current level 6B restriction (level 6B) limits per-person daily use to 50 L for all domestic purposes (consumption, washing, toilet flushing). To assess the effectiveness of this measure, the City reduced water pressure and installed water management devices in high users' residence to control the daily volumes of water used. It created a portal with a water map showing which residences have complied with the monthly water allocation of 6 kL.

Farmers in the Western Cape "donated" 10 million cubic meters (10 billion litres) of water, almost 3 weeks of the city's domestic use. Water from farmers' private dams was released into the river to reach the reservoir that supplies the city. This involved consultations and agreements with farmers as well as permission from the City of Cape Town and the National Department of Water and Sanitation to finalise the complex water licensing requirements and permissions for water use and mobilizing.

Informed about the urgency to reduce water usage, most of Cape Town's communities rose to the challenge. Social media has been effectively used to share water saving tips and information for storing and using greywater; e.g. "Water Shedding Western Cape" is a Facebook site with over 150,000 members. Radio shows feature water issues daily, keeping communities informed and inspired. WWF South Africa prepares a weekly water file with information on different topics and tips to prepare for "Day Zero."

Water managers and water users need information to create strategies to allocate water resources and to evaluate the effectiveness, especially when facing water scarcity. Box 2 illustrates how information is helping the City of Cape Town, South Africa, track water allocation in response to the recent drought in the region. It also shows how information serves to engage stakeholders in dealing with the water crisis.

[In order to implement IWRM, information is needed on the condition of water resources and how they may be affected by Climate Change.](#) Therefore, the capacity of River Basin Organisations, research institutions, and other stakeholders has to be strengthened so that they can monitor water resources and climate at multiple geographical scales. This will help generate information on the current state of water resources and how changes in climatic patterns may affect them.

The participation of all concerned stakeholders according to local culture and customs is essential for IWRM to succeed. However, water management is often implemented as a top-down approach, with little involvement of stakeholders.⁶ To effectively implement IWRM, African practitioners mentioned the urgency to overcome obstacles such as poor institutional learning, failure to integrate IWRM in national policy and planning, low stakeholder involvement, and disregard for traditional knowledge in research, policy and management for adaptation. Box 3 presents insights on requirements for facilitating a bottom up approach for IWRM⁷.

Strengthening the capacity of local communities to participate in water management is key for water security

SDG 6b calls for increased participation of communities in water management. From their efforts to engage stakeholders, some African practitioners reported obstacles such as poor knowledge among the general public about water and Climate Change issues, low awareness of services from wetland and other ecosystems, limited local capacity to implement adaptation measures, and illegal practices that affect water and the environment. [Increasing the participation of communities in IWRM requires improving their understanding of climate and water issues.](#)

Partnerships among academia, NGOs and communities are needed to support local stakeholders to implement adaptation strategies. For example, in Burkina Faso⁸, researchers and CSOs support farmers in adopting Climate Smart Agriculture practices by providing information on soil conservation practices and water management technologies for irrigation, such as the construction of traditional Zai pits and micro and macro-catchment runoff harvesting. Box 4 illustrates how academia and CSOs supported farmers in modifying their agricultural practices to enhance their resilience to Climate Change.

Good governance is crucial to increase water security in times of Climate Change

SDG 6a aims for more collaboration to strengthen capacity on water and sanitation-related activities and programmes. However, several African countries struggle with poor governance resulting from corruption, lack of transparency and poor accountability, among others. This has resulted in the poor experiencing the impacts of development more than its benefits. Consequently, African governments have been urged to ensure that resources are managed in a way that benefits the entire population.¹ The stakeholders involved in the AfriAlliance research called for the use of environmental and social impact assessments for investors, donors and governments and the need to guarantee clear benefits for local communities and disadvantaged groups. Funding should include provisions for protecting and restoring ecosystems such as mountains, forests, wetlands, rivers, aquifers and lakes (SDG 6.6), which are the natural infrastructure that supports the water cycle and Climate Change mitigation and adaptation.

IWRM from the bottom up

BOX 3

AfriAlliance has undertaken bottom up stakeholder engagement processes in Ghana and South Africa to understand what is required to incorporate local knowledge into action or policy at a regional or national level. The main insights from this process are as follows:

- IWRM requires systematic approaches for the integration of data systems.
- The media, partnerships and international networks, donors, CSOs and local communities have complementary roles in IWRM implementation.
- Trust building connected to a feedback gathering process are essential to facilitate knowledge sharing.
- "Windows of opportunity" must be used to create awareness of IWRM and mobilise resources for it.



Effective implementation of IWRM requires the incorporation of local communities. Photo: Abdoul Wahab ZOMBRA

Local participation in water management and ecosystem restoration

BOX 4

Population growth in the Nadawli District (Upper West Region in Northern Ghana) and changes in climate have increased the pressures on agricultural land. Traditional slash-and-burn crop rotation systems, common over the last 20 years, have been largely replaced with continuous land cultivation, leading, among other, to soil degradation. Farming communities worked with academia, private consultancies and NGOs to modify farming practices to increase resilience to Climate Change. The result was the establishment of a pilot agroforestry system in which the natural regeneration of local trees increases the availability of local biomass to improve soil fertility from shed leaves, reduces soil erosion and land degradation, provides shade for the crops, and, importantly, draws water up from the water table to make it available to the crops. Much of the land is still manually cultivated, so scattered trees on plots do not obstruct farm operations. The successful implementation of this agroforestry system and water conservation practices required the collaboration of stakeholders to promote learning and to increase participation. (AfriAlliance Action Group on Sustainable Intensification for Resilience and Food Security [SIRAF] ⁹).

African practitioners ask for greater alignment of donor priorities with national political agendas and for projects of Civil Society Organisations (CSOs) to strengthen local, national and regional capacity to use resources efficiently. Increasing knowledge and capacity development is a slow and complex process, which often conflicts with the short-term focus of funding¹⁰ and evaluation of programmes. Therefore, to strengthen capacity at multiple levels, investors and donors need to consider long-term support with a vision to creating synergies among Climate Change adaptation, water security and the improvement of livelihoods. Supporting community-based, multi-disciplinary and multi-stakeholder approaches that integrate indigenous knowledge and create long term partnerships will help achieve that vision.

All stakeholders have a role in achieving water security and protecting water-related ecosystems in times of Climate Change

All stakeholders need to collaborate to strengthen local and national capacity in African countries for managing water resources within the constraints imposed by Climate Change. These efforts effectively cut across SDG6 (water and sanitation for all), SDG 13 (Climate Change) and SDG 17 (partnerships).

Decision makers/ implementers and knowledge organisations

- Support water managing organisations and stakeholders in understanding the effects that Climate Change has on their operations and in designing strategies for adaptation.
- Work closely with water managing organisations and water users to identify their specific needs for water management and Climate Change adaptation and to develop relevant solutions.

Donors, investors, and governments at various levels, and knowledge and capacity development organisations

- Increase dialogue and collaborate with water stakeholders to align priorities for strengthening capacity and developing infrastructure.
- Support the consolidation of regional and national networks for water and climate monitoring and the creation of information sharing portals where data and information are shared openly with users to improve management decisions from local to regional levels.
- Promote the integration of traditional knowledge and uptake (via information and training) of appropriate cost-effective indigenous water harvesting technologies such as traditional micro-catchment runoff harvesting (contours bunds, zaï, half-moon, micro reservoirs) to increase supply for domestic use and irrigation. Promote adoption of multiple irrigation alternatives (surface irrigation, sprinkler irrigation and drip irrigation) rather than relying on a single one.
- Include Climate Change, environmental and social risk assessment in investment projects and oversee the participation of local communities along the project cycle.

Communities

- Gain greater understanding of how Climate Change may affect their water resources and collaborate with other stakeholders to design and implement adaptation strategies, including the restoration of ecosystems.
- Work with knowledge organisations and Civil Society Organisations to identify the factors that obstruct or facilitate knowledge sharing and the transfer of technological and non-technological solutions to use water resources more efficiently in times of Climate Change.
- Consider benchmarking visits between different local groups for people to share and learn from best practices.

All stakeholders, including donors, investors, various levels of government, knowledge organizations and civil society need to join forces to demand and implement greater accountability in order to improve water governance.

AfriAlliance is a five year project funded by the European Union's Horizon 2020 research and innovation programme. AfriAlliance facilitates the collaboration of African and European stakeholders in the areas of water and climate innovation, research, policy and capacity development by supporting knowledge sharing and technology transfer. Rather than creating new networks, the 16 European and African partners in this project consolidate existing ones. The ultimate objective is to strengthen African preparedness for future Climate Change challenges. AfriAlliance is coordinated by the IHE Delft Institute for Water Education (Project Director: Dr. Uta Wehn) and runs from 2016 to 2021.

Website: afrialliance.org

PRODUCTION

Authors: Angeles Mendoza and Uta Wehn (IHE Delft)

Contributors: Bettina Genthe (CSIR), Jean-Marie Kileshye Onema (WaterNet), David Smith (WE&B), Harro Riedstra (Akvo), William Fonta and Thomas Yamego (WASCAL)

Graphic Design: Carola Straatman

REFERENCES

1. African Union, Economic Commission for Africa; African Development Bank and United Nations Development Programme. 2017. Africa Sustainable Development Report. Tracking Progress on Agenda 2063 and the Sustainable Development Goals. Addis Ababa, Ethiopia.
2. Africa Progress Panel. 2017. Making progress towards attaining the sustainable development goals in Africa. Dec. 15. Available at www.africaprogresspanel.org/.
3. World Economic Forum. 2018. The Global Risks Report 2018. 13th Edition. Geneva. ISBN: 978-1-944835-15-6.
4. AfriAlliance. 2018. Initial Demand-Driven Research & Innovation Outlook (Deliverable D2.2), 31 January. Available at afrialliance.org/media/report-demand-driven-research.
5. United Nations Environment Programme. 2010. Africa Water Atlas. Division of Early Warning and Assessment (DEWA). UNEP. Nairobi, Kenya.
6. NGO Forum UNESCO Africa Water (2014). IWRM in Africa enlightened by organic thought. Retrieved from https://isocarp.org/app/uploads/2015/12/2014-09-03_DOS-GIRE_c_EN.pdf
7. AfriAlliance. 2017. Report on the functioning of stakeholders and existing networks (Deliverable D1.5). 30 August. Available at afrialliance.org.
8. West African Science Service on Climate Change and Adapted Land Use (WASCAL). 2016 study on the status of Climate Smart Agriculture (CSA) practices in Burkina Faso. Unpublished. For information: www.wascal.org.
9. SIRAF. 2017. Farmer-managed natural regeneration - it's all about trade-offs! Available at rsr.akvo.org/en/project/5282/update/16612/.
10. Mvulirwenande, S., Wehn, U. Alaerts, G. 2017. Evaluating knowledge and capacity development in the water sector: challenges and progress. *Water International* 42(4):372-384.



The AfriAlliance project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 689162.

✉ afrialliance@un-ihe.org 🌐 www.afrialliance.org