REPORTING CLIMATE CHANGE:

A PRACTICAL GUIDE FOR AFRICAN JOURNALISTS

Shrinking resources and rising tides: The effect of climate change on Africa's water systems

China 中南项目
Global South Project

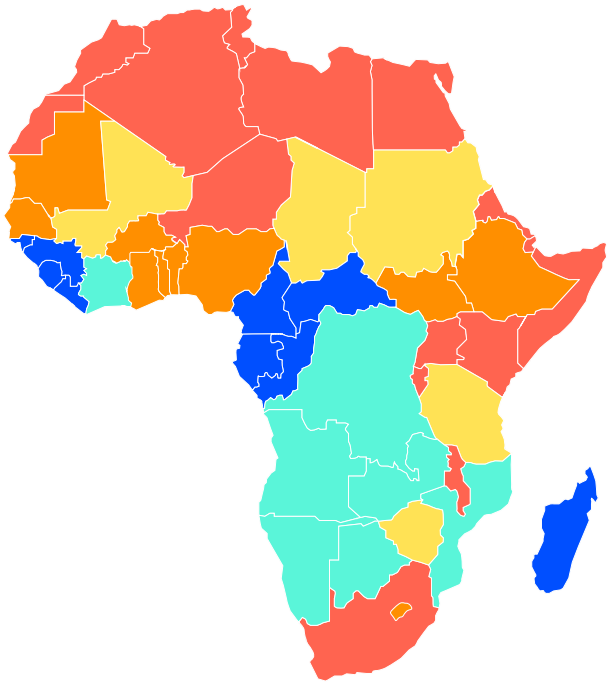
The Quick Take

Africa's vulnerability to climate change and rapid population growth is on a collision course that will place water resources at the center of the continent's development challenges. The water-related effects of climate change — droughts, floods, sea-level rise, extreme weather events, and disrupted weather patterns — are already hitting the continent's people, economies and ecosystems.

Water is essential to the successful resolution of the continent's socio-economic challenges, while novel approaches will be needed to develop water resources and related adaptation strategies. High water stress will affect about 250 million Africans and displace as many as 700 million by 2030.

The Story in Numbers:

13	the current number of critically water-scarce African nations
5	consecutive years of failed rainfall seasons in the Horn of Africa, the longest in 40 years
108 - 116 million	the number of Africans likely to be exposed to sea-level rise by 2030
95	the percentage of Africa's agricultural sector that is reliant on rainfall for success
110 million	the number of Africans directly affected by weather, climate and water-related hazards in 2022



Anticipated blue water (rivers, lakes, glaciers) availability by 2050

3 Things you should know:

1. The African continent is suffering disproportionately from climate change. Temperature increases are on average slightly higher than the rest of the world and sea-level rise along the African coastlines is higher than the global mean, particularly along the Red Sea and southwest Indian Ocean. Glaciers in equatorial East Africa are retreating faster than the global mean.

2. The continent is increasingly experiencing extreme recent weather events including severe droughts, flooding, heat accompanied by wildfires, and dust storms. Climate change impacts are anticipated to cost African nations $50 billion annually by 2050.

3. More droughts and higher populations are placing increasing strain on scarce water resources. Across the continent's 54 countries, nearly 31% (over 411 million) lack access to basic drinking water and more than 780) 58% million) lack access to basic sanitation services.

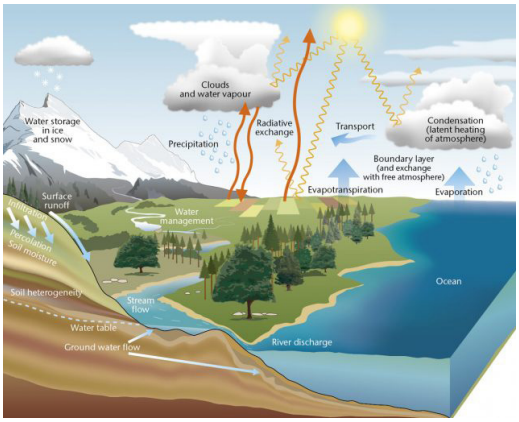
We've all heard that water is a critical ingredient for life. But less discussed is water's critical role in socioeconomic development.

Water and climate change are inseparable, meaning that climate change has a wide-ranging impact on the world›s water systems. Global warming causes sea levels to rise as ice sheets and glaciers melt and generates unstable rainfall patterns that trigger increasingly extreme droughts and floods.

These effects in turn threaten water quality, contaminating water sources with pollutants and sediment runoff or causing saltwater intrusion.

Though 71% of the earth's surface is water, only 2.8% of that is the freshwater we need for survival. As climate change escalates and freshwater resources dwindle, the risks associated with water scarcity – reducing biodiversity, challenging sanitation and development, threatening human health and increasing political conflict – continue to rise, making the climate change story a story about water.

The effects of climate change on water systems



Drought:

Warmer temperatures increase evaporation since warmer air holds more moisture. As temperatures rise, more water evaporates from oceans, lakes, plants and the ground. Rainfall is reduced affecting agriculture and access to water for drinking. When rain does fall, it may be less frequent but more intense, increasing the risk of flooding and other damage from extreme weather events.

Flooding and sea-level rise:

Flooding can cause damage to water and sanitation infrastructure and pollute freshwater resources. Meanwhile, rising sea levels contaminate freshwater sources with saltwater and threaten coastal communities.

Ice caps, glaciers and snowpack:

As average global temperatures increase, the polar caps at the North and South Poles, mountain glaciers and snowpacks are melting and shrinking. The resulting meltwater can be more than many of the great river systems can handle, causing flooding and associated damage in low-lying areas.

Wildfires:

Warmer, drier conditions can lengthen and worsen fire seasons. Extreme weather events, droughts and flooding destroy the vegetation and tree cover that hold the soil together. The resulting erosion reduces groundwater recharge.

Groundwater:

Increasingly unpredictable weather events are affecting the dependency on groundwater, potentially reducing the amount of water finding its way to underground aquifers. Meanwhile, dryer weather patterns are increasing the demand for the use of groundwater, depleting available sources more quickly.

Oceans:

Warmer temperatures are heating up oceans and increasing acidity. This is altering ocean food chains as fish move in search of colder water. This is affecting the 3.5 billion people globally who depend on the oceans as their primary food source. The world's oceans are also a critical 'carbon sink' absorbing 25% of carbon emissions and heat. As the oceans heat up their ability to serve this function is reduced. Ocean temperatures dictate major ocean currents, which are the cause of global weather patterns. Climate change has the potential to change these currents with catastrophic consequences.

Africa's unfolding water story

As the second driest continent, Africa has access to only 9% of the global renewable freshwater resource. Nearly half of this available resource is found in or close to the rainforests of central Africa, leaving some 40% of the continent's nearly 1.5 billion people living in arid, semi-arid and dry sub-humid areas.

Climate change-related drought is projected to result in water scarcity for nearly 230 million Africans by 2050. As many as 460 million will live in areas where the demand for water periodically exceeds the available supply.

Africa is no stranger to drought, but the prolonged drought in the Horn of Africa over

the past three or four years has displaced 2.7 million people and left 23.4 million people acutely food insecure.

Collaborating African and international scientists have determined that human-induced climate change has strengthened and increased the frequency of such weather events making droughts like this about 100 times more likely.

Droughts threaten food security health and income, increasing poverty rates and placing already fragile states at higher risk of conflict and collapse.

The effects of droughts and associated heat waves are not just terrestrial. The rate of marine heatwaves has also increased in the past 40 years, doubling the number of African marine heatwaves in the North African Mediterranean Sea along the Somalian and southern African coastlines. These are threatening coral reefs and the biodiversity and tourism that accompany them as well as changing marine migration patterns. Africa's -$25 billion marine fisheries sector is projected to be reduced by 30% by 2050 as a result.

Sea-level rise is thought of as a distant future climate threat, but it is an effect of climate change that will have widespread and complex consequences for people and economies. And it is not far off. Sea levels are conservatively anticipated to rise by 0.3 meters by 2030 at the current rate of global warming. This seemingly insignificant rise will affect at least 117 million Africans.

Steady sea-level rise over the past four decades is posing a significant threat to African coastlines and cities, causing coastal flooding, erosion, and habitat loss. Besides rising seawater and storm surges, coastal cities are at threat from rising groundwater, which contaminates freshwater aquifers, damages infrastructure and increases the risk of waterborne diseases.

Rising sea levels coincide with rapidly expanding populations, particularly in African coastal cities where coastal economic activity presents attractive prospects. While the continent's overall population is expected to increase by 27% between 2020 and 2030, the populations of the continent's largest coastal cities, Lagos, Luanda, Dar es Salaam, Alexandria, Abidjan, Cape Town, and Casablanca, are expected to grow by 40% in the same period, from 48 million to 69 million people. By 2030, as many as 116 million Africans will live in coastal zones. This number is expected to double by 2060.

Coastal regions in North and West Africa will likely be worst affected in the short term as these possess the majority of the projected coastal populations. Egypt and Nigeria are likely to lose several kilometers of coastline and much of the Nile Delta. More than half of the Benin, Côte d'Ivoire, Senegal, and Togo coastlines are exposed to erosion loss of two meters each year. Sea-level rise is of greatest concern in countries whose populations are heavily congregated in coastal areas such as Senegal (41%), Benin (35%) and Liberia (29%).

Unmitigated sea-level rise will displace significant numbers of people, but it will also profoundly affect Africa's interiors as port city disruptions ripple through economies and supply networks. Sea-level rise is projected to incur damage costs of about $86.5 billion by 2050 to African coastal cities, while displacements will put additional pressure on resource access and national stability.
In Senegal's Saint-Louis, rising sea levels have already devastated the port city and displaced residents. Several West African coastal cities, such as Côte d'Ivoire Abidjan and Guinea's Conakry are in line to follow, as are coastal hubs around the continent.

Several low-lying, heavily populated cities, such as Alexandria, risk being submersed within the next three decades.

For many coastal settlements, such as Beira in Mozambique, rising sea levels are compounded by increasingly severe weather events as warmer sea surface temperatures widen and intensify the cyclone path from the Indian Ocean.

Warming oceans have triggered four times as many storms and more than doubled the cyclones affecting the African continent since the 1970s. Hitting Madagascar and northern Mozambique harder than before, the effects of these storms are increasingly more widespread reaching into Tanzania and South Africa.

Flooding associated with such extreme storms increases the spread of vector-borne diseases such as malaria, yellow fever, dengue, Zika and Rift Valley Fever. Increased transmission of such diseases is expected to primarily affect East and Southern Africa. Floods have accounted for 66% of African disasters since 2000, with people in South Sudan, Sudan, Somalia, Ethiopia and Kenya most, but not exclusively, affected.

Green infrastructure contributes to adaptation strategies

A Reliefweb analysis highlights how rapidly growing populations, land pressures and affordable housing shortages are compounding the challenges facing African coastal cities as sea levels rise. As people are forced to occupy wetlands and shorelines, the natural barriers and ecosystems that form some protection from storm surges and flooding are increasingly weakened.

Climate risk assessments in coastal cities including Bizerte (Tunisia), Conakry (Guinea), and Libreville (Gabon) have identified investing in water and sanitation infrastructure and restoring wetlands and ecosystems as some of the most cost-effective methods to reduce flood risk and aid disaster evacuation planning.

The proposed solutions highlight the possibilities of employing nature-based or 'green infrastructure' adaptation solutions such as restoring coastal ecosystems - wetlands, mangroves and dunes – to manage the effects of climate change.

Examples of green infrastructure adaptation projects in Africa include

PAPBio C-1Mangroves: Mangrove forest management from Senegal to Benin, which aims to integrate biodiversity protection and fragile mangrove ecosystems in West Africa and enhance their resilience to climate change.

The West Africa Coastal Areas Management Program is a public-private partnership that tackles coastal erosion, flooding, pollution and climate change adaptation across 17 West African countries.

The Coastal City Adaptation Project began restoring mangroves in Quelimane, Mozambique, in 2015 as a protective layer against storms. The mangroves were responsible for saving the town when Cyclone Idai hit the coast in 2019.

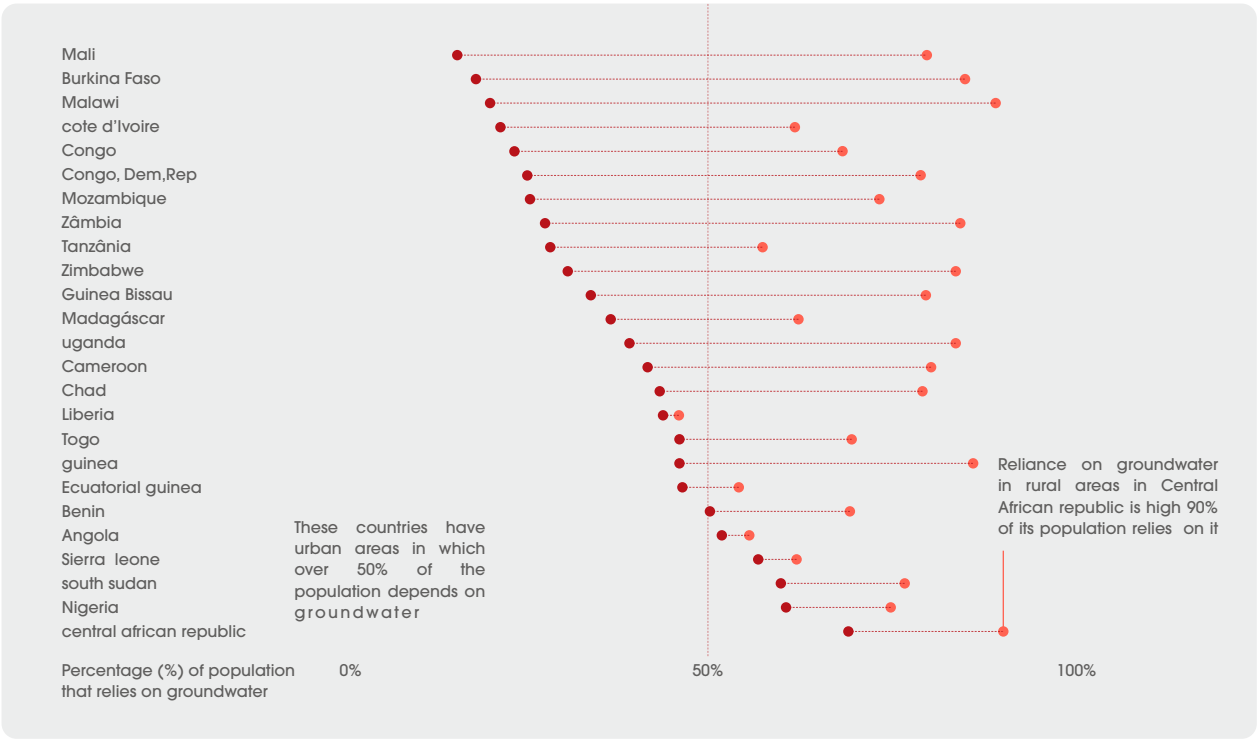
Nature-based solutions for green infrastructure are increasingly prevalent on the continent as African leaders recognize their potential for improving food and income security, enhancing biodiversity and contributing to climate change adaptation and mitigation efforts. Besides coastal ecosystem restoration, this approach is used for land degradation neutrality and catchment restoration.

Mechanical excavation of sand to manage beach erosion and sea level rise, Golden Mile waterfront, Durban, KwaZulu-Natal, South Africa. Frank Kahts Durban

Groundwater – Africa's insurance policy

As global temperatures rise, many African nations are increasingly turning to groundwater, a water source long-relied on, to meet their water needs.

Beneath the surface, groundwater moves through underground aquifers providing drinking water for about 44% of the sub-Saharan African population. It is estimated that a quarter of the region's urban population relies on groundwater, although this figure can be much higher in some countries.



Percentage of population that relies on groundwater

The reality that we will need to adapt to the effects of climate change has spurred researchers to map Africa's available groundwater and recharge rates with surprising results. If the research is correct, sub-Saharan African countries, with the exceptions of Uganda, Rwanda and Burundi, have enough groundwater reserves to navigate at least five years of drought.

Africa's groundwater remains largely untapped for now. Accessing and delivering it to those who need it would require sufficient investment in infrastructure and services. It will also require more knowledge of geology as the resource is invisible and its quantity and quality varies significantly.

If we are to learn anything from the mistakes made in other parts of the world, groundwater exploitation will need to be carefully managed to avoid overuse, poor regulation, mismanagement, contamination and pollution of the resource. Sustained, multiyear withdrawals that exceed the available resource may deplete groundwater sources, while pollution from fertilizers, pesticides, industry or sewage can contaminate resources. A recent study found E.coli present in 20% of boreholes in Ethiopia, Uganda and Malawi.

Years of reserves of potentially usable groundwater at a national level, based on current usage plus current population using 130 litres per person per day, assuming no active recharge

Exploring the forest-climate water connection

Sometimes referred to as "the lungs of Africa", the Congo Basin is the largest carbon sink in the world.
This capacity to absorb and trap carbon from the atmosphere alone is enough to justify the protection of the rainforest against deforestation. What is less appreciated, however, is the Congo Basin's influence on continental precipitation, or rainfall, and in turn, weather patterns.

The evidence suggests that the region is the source of precipitation for other sink regions such as the Ethiopian Highlands and West African rainforests. The Congo Basin transports moisture to the Ethiopian Highlands, which are the source of 85% of water going through the Nile River basin to Aswan in Egypt. Thirty-eight percent of the moisture that reaches the West African Highlands originates in the Congo Basin and the region is the major source of moisture for precipitation in the Sahel. Conversely, the main source of rainfall in the Congo basin is evaporative moisture from East Africa. Ongoing droughts in that region, caused by global climate change, are in turn contributing to the destruction of central Africa's rainforests.

Preserving the Congo Basin rainforests is an essential part of mitigating climate change, both for the continent and the planet. Besides regulating rainfall, these rainforests are critical as they generate clean air and water, provide food and wildlife habitats, and protect against floods. The second-largest river system in the world is found in the Congo Basin, which also provides millions of people with a living through forestry, fishing, and other related industries. The continued degradation of this resource, which is under threat from deforestation, growing population and climate change, will have severe consequences for Africa's water future.

The Role of Water in the water-energy-food nexus

Water, energy and food security are intricately linked. Water is required for food production, but it is also essential to energy generation, both for generating electricity through hydropower and for cooling in some fossil fuel energy production processes. Where water is scarce, choices need to be made about where to allocate limited water resources.

Hydropower currently accounts for about 17% of Africa's electricity generation, exceeding 80% in some countries such as the Democratic Republic of Congo, Ethiopia, Malawi, Mozambique, Uganda, and Zambia. Although there is potential for more hydropower on the continent, current projections suggest that the capacity of African hydropower plants is likely to be significantly diminished as a result of climate change, potentially limiting the technology's future viability as an energy source for Africa.

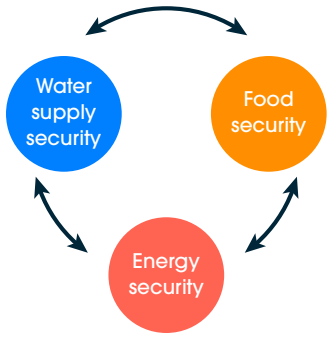
The allocation of limited water resources for food production might have a detrimental impact on energy delivery, while ringfencing water resources for energy production could seriously challenge food security. Similarly, food production relies on and impacts water and energy. In addition to needing water for agricultural success, food production can cause soil degradation, disturb groundwater release, water quality and the accessibility of land. Energy is required throughout the food system, from planting and harvesting to transporting and packaging.

Does desalination play a role in Africa's water future?

Desalination is the process of transforming water with high salt content into fresh water. Most plants use reverse osmosis, which separates salt from water by passing it through a semi-permeable membrane, to achieve this.

Some African nations, particularly in North Africa, are investing heavily in desalination.

Algeria's water emergency plan prioritizes water from desalination and its Hama Seawater Desalination Plant is the largest on the continent. Seventeen percent of the country's drinking water is desalinated.



Nexus perspective

Egypt has announced plans to invest $8.5 billion to develop 47 desalination plants by 2050 and Morocco has recently installed a 275,000 m^3/desalination plant.

There is less interest in desalination in sub-Saharan Africa, though Namibia has announced plans to develop a second desalination plant to supply its water needs and small desalination plants are in operation in South Africa and Kenya.

Few African countries view desalination as a viable option in their water resource management strategies. Neither the African Development Bank nor the African Ministers' Council on Water have included desalination in their most recent water strategies as the process is expensive, operationally challenging, energy-intensive, requires specialized staff and is environmentally unsound as it produces chemical discharge and has a large carbon footprint.

While technology may have some role to play in delivering fresh water for African nations facing water scarcity, and although renewable energy could drive down some of the costs of desalination, better management of existing water resources might be the wiser course of action in the short term.

AFRICAN VOICES:

Insights about covering climate change from leading experts across the continent

Water is not one of the topics that people think about as a dedicated stand-alone issue. Stories about draught, floods and heavy rains tend to be reported on as weather stories rather than address the underlying causes.

But as is evident from this guide, there's a lot more to reporting on water issues than the weather alone. Nairobi-based journalist Njenga Hakeenah spoke with Dr. Steven Mathetsa, a registered professional natural scientist with the South African Council for Natural Scientists Profession (SACNASP) and a member of Water Institute of Southern Africa (WISA), to find out how journalists can better improve their reporting on this complex, yet very important topic.

NJENGA HAKEENAH: What are the most important water challenges facing Africa today, and what hinders journalists' contributions to the water discussions being reported in African media?

STEVEN MATHETSA: Africa, especially the sub-Saharan region, is a very water-scarce region where there are a lot of trans-boundary issues in terms of water-basins. For example, you will find that some of the water available in South Africa is being shared with other countries such as Mozambique and Botswana.

Access to water is a challenge on the continent. Approximately 30% of the African population does not have access to fresh water and on top of that we have issues regarding water pollution in Southern Africa. South Africa particularly, we are a developing country and trying to industrialize, and if we bring in new businesses into the country we will encounter issues such as pollution to water that is already scarce especially in the mining industry. The issue of climate change cannot be overlooked as it has an impact on both water quantity and water quality.

> **"I am still yet to come across a story on water in Africa by an African, considering that I am a researcher. But, I am not saying that there are none, just that it is not as frequent as it should for us researchers and scientists."**

The media needs to understand the interlinkages of all these elements and not report one side of the things. For example, if they report on water they need to understand what other activities are linked to water and what kind of impacts water availability has on the communities and diversify their thinking and understand that water is one of those natural resources that can be used to enhance our economy and understand that all these things are interlinked. This means that the media needs to understand the role that water plays in the energy space and also in agriculture or food production.

NJENGA: How can journalists better understand and report on the complex technical and social issues surrounding water in African countries like South Africa?

STEVEN: From the reporting point of view, reporting needs to be based on facts. Journalists and reporters need to understand the complexity of the subject and also familiarize themselves with the recent developments in water science and management.

NJENGA: What are some strategies for journalists to ensure that their coverage of water issues is accurate, balanced, and fair?

STEVEN: Transparency and honesty in the reporting and try not to sell what they are reporting on. Independence is very important in this space and trying not to be biased.

NJENGA: How can journalists better give a voice to the experiences and perspectives of African experts who are disproportionately represented in global discussions on water availability in Africa? And what are some ways for journalists to collaborate with water experts and other stakeholders to produce more impactful reporting?

STEVEN: Journalists play a very important role in our communities and they can bridge the gap between policy makers and the community. However, they still need to follow what is happening across the globe and try to localize its impact on our local communities and also try to get more perspective from water-scientists.

Reporting has to be on both on the negative and positive developments in water issues so that it is balanced in order to give the reader their own judgment.

NJENGA: Why do you think foreign voices are elevated above African voices on matters of water availability in Africa?

STEVEN: Africa is generally poor, and we have to look at it from different perspectives such as technology, funding and everything that has to do with water and even with information is under-used and we rely on information from foreign voices. So, we're still very much dependent on foreign voices and what we are being told based on where we come from as a continent and simply because we are poor and we have a long history of colonialism that we have not necessarily moved away from. We are not as independent as we would like to be in this discourse.

NJENGA: How has the African media played a role in telling the water story from an African perspective? And can your knowledge be used by these young journalists?

STEVEN: I am still yet to come across a story on water in Africa by an African, considering that I am a researcher. But, I am not saying that there are none, just that it is not as frequent as it should for us researchers and scientists.

NJENGA: What role does indigenous knowledge play in adapting to climate-related water constraints?

STEVEN: Indigenous knowledge plays a major role in the current climate of water scarcity and water sharing because most indigenous knowledge sharing is based within our local communities and reflects local or cultural behavior towards water security. This is very important for adaptation so that these communities are aware of adaptation and issues related to droughts or flooding.

Reporting Guide: Resources for African Journalists

Resources focused specifically on African water issues that will help you to improve your reporting on the subject.

Who to Follow

Water Journalists Africa

Network of African journalists who report about water

@H2Ojournalists

Water Aid East Africa

Providing access to water, sanitation and hygiene in 6 East African countries

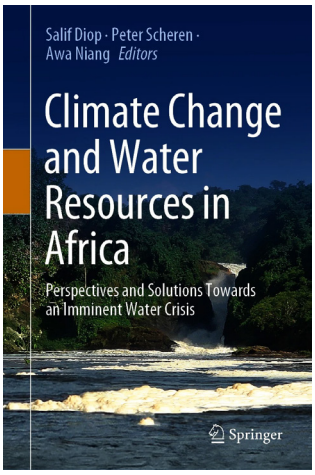
@WaterAidEA

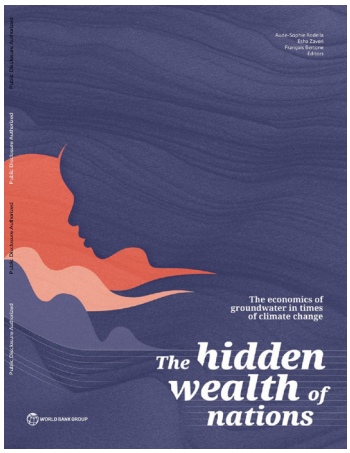
Nile Basin Initiative

Partnership among the Nile riparian states that seeks to develop the river in a cooperative manner

@nbiweb

Book Recommendations





Helpful Resources:

The Africa Water Vision 2025

The Africa Water Vision for 2025 provides a detailed roadmap for how countries across the continent can improve water resource management to stimulate and sustain growth in the region's economic development and social well-being.

Click here to download the report (PDF):
bit.ly/WaterVision2035