

# Factsheet for young people

## CLIMATE ADAPTATION IN AFRICA

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GLOBAL  
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YOUTH ADAPTATION NETWORK

# Water Resources Management, Floods and Disaster Risk Management

## 6 CLEAN WATER AND SANITATION



One of the most important manifestations of climate change in Africa is through water.

We are experiencing more competition and conflict among countries, sectors, communities, and individuals over water. Water and land scarcity exacerbated by the effects of climate change, particularly in countries rooted in ethnic divisions, can lead to tensions. In fragile settings, these tensions can escalate into violence and conflict. Most countries in Africa face challenges on both fronts, with regard to both managing water resources in a sustainable manner and ensuring affordable and reliable water service delivery to farmers, households, and industries. Africa has the largest number of transboundary river basins globally, with the Nile, Niger, Senegal, Zambezi, Congo, Volta Rivers, and Lake Chad as the region's primary regional growth arteries. Climate change is likely to greatly increase the number of people exposed to the risk of floods, which is significant and growing. Global research, including the work of the Global Center on Adaptation (GCA), has shown that those living in poverty are particularly vulnerable to climate shocks such as floods. Floods also have long-term human capital impacts beyond their immediate disruptive effects. This makes systematic Disaster Risk Reduction (DRR), together with Integrated Water Resource Management (IWRM), an indispensable step in the journey towards climate adaptation, as well as any wider program of equitable development in Africa. IWRM is a holistic framework used to address the diverse demands and pressures on water resources across sectors and at different scales – from the local to the transnational – in an equitable, sustainable manner, and adaptation is a key component of disaster risk management.

### MAIN BARRIERS TO EFFECTIVE FLOOD MANAGEMENT



Lower-quality housing that is more vulnerable to damage and loss



Less-resilient infrastructure services



The low data coverage of most river basins in Africa



Greater susceptibility to diseases linked to floods, such as cholera

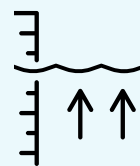


Greater income dependence on climate-dependent agriculture and ecosystems



Long-term human capital impacts through compromised health and education systems during floods

### KEY NUMBERS



1.47 billion people are living in areas with high flood risk globally

In Africa, floods accounted for 65% of disaster events

over the period 2008–2018



More than half of the global poor facing flood risks live in Sub-Saharan Africa



90% of Africa's surface water is in transboundary basins



48 mainland countries of Africa share 134 transboundary basins and aquifers



By 2050, projected economic damage from floods in Africa could reach \$266 billion per year



Flood related fatalities across Africa may rise by 57% in a 1.5 C warmer world

## FLOOD RISK MANAGEMENT

One of the most direct transmission channels of the consequences of climate change is through water: too much, too little, at unexpected times. The rapidly growing population of Africa, more water-intensive growth paths worldwide and in the region, and increasing pollution, are all factors that will make climate adaptation more complicated and more urgent.

- **In Africa, the rainfall and river basin flows have a wide range of variability, which poses significant challenges.** These challenges range from managing floods in large transboundary river basins, understanding extreme floods in ungauged catchments with minimal information, and reducing the vulnerability of low-income informal settlements in African cities.
- **The traditional structural measures to reduce floods** such as dams and reservoirs, dikes and levees, embankments and diversions, or river and channel improvements **are high in costs.**
- **The level of domestic financial resources dedicated to DRR activities is insufficient in most African countries.** On average, four percent of national budgets, at the planning stage, is related to DRR. The different institutional arrangements for DRR and climate change adaptation further lead to mismatches in governance, data and information, and funding streams.
- **Rapid changes in African societies and economies,** from urbanization to land-use change, development of floodplain areas, and climate change also affect the ability to project future flood risk.
- **Economically active coastal cities may be more exposed than other areas of a country.** However, within cities, poor people in informal, unplanned settlements are more likely to be exposed.
- **Increased migratory movements.** Migration is one possible adaptation strategy in the face of resource scarcity and livelihood insecurity. However, when not managed carefully: (1) migratory movements across borders to neighboring regions or within a country's borders towards neighboring communities can escalate tensions among different ethnic groups, particularly when natural resources are scarce (2) migration to urban areas could put additional strain on governments to deliver basic services, secure decent housing and job opportunities specially for youth.

## KEY MESSAGES ON FLOOD RISK MANAGEMENT

Understanding flood risk is fundamental.

Traditional structural flood reduction infrastructure is expensive and needs careful targeting.

The most essential and cost-effective non-structural flood risk management measures are planning and preparedness.

The next level of non-structural measures is related to land use planning and management.

Rapid changes in Africa make flood prediction in the short- and medium-term challenging.

Other structural measures to reduce flood risks with lower costs and greater flexibility are nature-based solutions.

Managing flood risk enables sustainable, resilient development and regeneration

## GOOD PRACTICES: YOUTH-LED ADAPTATION SOLUTIONS

### Kimplanter Seedling and Nurseries Limited, Kenya



One of the 2021 winners of the YouthADAPT Solutions Challenge, Kimplanter Seedlings and Nurseries Ltd is a Kenyan youth-led company that provides drought resistant seedlings that can grow in harsh climatic conditions. The company also provides farmers with farm inputs and agronomy support on the best crop management practice to improve production and maintain quality efficiently, generating income from the yields. The YouthADAPT grant is helping the business undertake research to develop new varieties of seedlings that are both drought resistant and high in nutrition, while offering training and support to the farmers who buy their products, and scaling up productivity.

Learn more about the African YouthADAPT Solutions Challenge at [www.youthadapt.africa](http://www.youthadapt.africa).



### World Youth Parliament for Water



The World Youth Parliament for Water (WYPW) was conceived by the International Secretariat for Water in 2002 to connect passionate young people and engage them in decision-making processes on water issues while raising awareness and empowering young water leaders to advance equity, peace, and a healthy environment within the water sector. The initiative has since established over 50 local and regional parliaments, mobilizing over 15,000 young leaders from 80 countries to take action on water issues at all levels. In 2022, WYPW members participated in GCA's Youth Adaptation Dialogue to highlight the importance of water and young people's role in amplifying adaptation action.

Learn more about the World Youth Parliament for Water at [www.youthforwater.org](http://www.youthforwater.org)



## KEY POLICY RECOMMENDATIONS

Defending against future floods in Africa will require more robust, flexible, and incremental approaches that can adapt to a broader range of future development paths and a changing climate.

**Africa needs adequate infrastructure** to access, store and conserve its water resources; and to strengthen resilience against disasters and climate change effects.



**River basin organizations** are important for the region considering that transboundary aquifers underlie over 40 percent of the continent.



**Investment in disaster risk reduction and in water management plans and systems must be enhanced** to boost the continent's adaptation and resilience to water-related disasters in a changing climate.

**Analysing the distribution of floods and poverty at the sub-national level can provide insights for spatially targeted policies** to reduce the flood vulnerability of the poor. At the same time, often the most practical option to prevent flooding downstream is to take action upstream.



**Upfront investments** in preparedness, response, and recovery, as well as early warning systems, better ex-ante planning, rapid response in the aftermath of a disaster, and overall resilience building of vulnerable populations, are needed.



**Integrated water adaptation solutions that connect economic sectors and different levels of government** are needed. The river basin is the spatial scale required for such integration.



**Considerable investments in infrastructure are required to improve access, manage water-related risks, and increase water security.**

The integration of green infrastructure and nature-based solutions plays an increasingly important role in providing safe, clean and regular water flows. These measures include, among many others, the preservation of wetlands, the preservation or restoration of natural floodplain storage, and the management of forest and vegetation cover.

**In addition to nature-based solutions, sustainable flood risk management should include the development of increased capabilities of existing approaches and novel methodologies** to lead to greater knowledge of flood processes and optimization of flood risk management infrastructure.



**Transboundary cooperation is another important dimension of managing the water resources of Africa.** Regional cooperation greatly expands the range of possibilities for effective climate adaptation.



**The coordination between IWRM and DRR is critical.** IWRM has traditionally included flood and drought risk management. However, coordinated actions and programs under different institutions with different approaches and areas of focus have prevented the integration of IWRM and DRR.

## MORE INFORMATION

### GCA's Youth Leadership & Education Program

The Global Center on Adaptation (GCA) is a solutions-broker for adaptation action. The Youth Leadership & Education Program aims to make young people central to driving the adaptation agenda.

### Factsheets for young people

This factsheet is part of a series that presents information from GCA's flagship reports State and Trends in Adaptation in Africa 2021 and 2022. It aims to disseminate key adaptation information to young people and showcase youth-led adaptation action from across Africa.

GCA, and the authors of State and Trends' reports Dr. Ede Ijjasz-Vásquez and Dr. Jamal Saghir.

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