

Hydropolitics Association –Türkiye

March 2025 Special Issue
World Water Day and Africa



**Water for peace and
prosperity
in Africa**

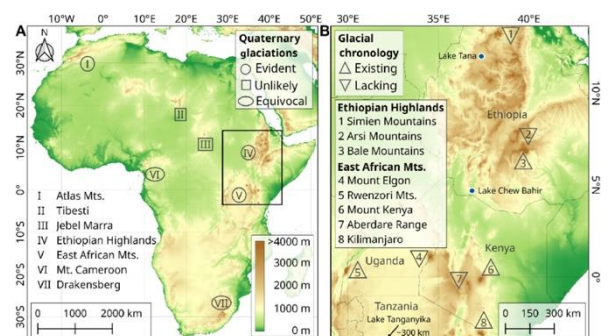
African Desk
HPA Center Türkiye

Preserving Africa's Glaciers from Extinction

World Water Day 2025, observed on March 22, focuses on the theme of “Glacier Preservation,” highlighting the critical role that glaciers play in sustaining life and the water cycle. As the world celebrates this Day, attention turns to the significant role glaciers have in maintaining global water systems, along with the unique challenges and opportunities this presents for Africa. While the continent does not host extensive glaciers, preserving these icy giants carries profound implications for Africa's water security, climate resilience, and sustainable development.

Glaciers are formed from fallen snow that condenses over the years into large, thick masses of ice. Currently, glaciers cover 10% of the world's total area and account for about 70% of global

freshwater, with most located in Antarctica, Greenland, and the Canadian Arctic. Glaciers in Africa are confined to three specific locations: two volcanoes (Mount Kilimanjaro and Mount Kenya) and the Ruwenzori Mountains. The total area of these three regions is approximately 10 square kilometers.



Quaternary glaciations in Africa
(Fig. source: Science Advances)

A pressing concern is the rapid deglaciation occurring in Africa's glacier fields, as they are at risk of extinction in the coming centuries due to global warming and climate change.

Mount Kilimanjaro, the highest mountain in Africa at 5,895 meters above sea level, features the largest ice field in Africa, estimated to be 100 meters deep. The mountain has three named ice fields—Northern, Southern, and Eastern—and 16 glaciers, all located at the peak. A massive dark glacier scree feature extends from atop to over a thousand meters and is visible from Karanga.

Despite the breathtaking sight of the Kilimanjaro glaciers and ice fields, 82% of the ice fields and 55% of the glaciers have been lost due to increasing temperatures on the rock beneath the glaciers. Glacier scientists and climatologists indicate that if the current recession of glaciers continues, most of the glaciers on Kilimanjaro could disappear entirely.



Glaciers Of Mount Kilimanjaro
(Image source: African Scenic Safaris)

Mount Kenya, the highest mountain in Kenya and the second highest in Africa after Kilimanjaro, has eleven known glaciers located at the Nelion, Batian, and Lenana peaks. These glaciers cover an area of 0.27 square miles. Each year, less new snow accumulates in winter compared to what melts in summer, particularly on the Lewis Glacier, which is the largest glacier on the mountain.

The glaciers on Mount Kenya are the source of the two largest rivers in Kenya: the River Tana and Ewaso Nyiro. The rapid recession and disappearance of glaciers have resulted in the drying of the rivers upstream. Glacier retreat on Africa's second-highest peak is attributed to climate change and variations in precipitation. If current climatic conditions persist, there will be no

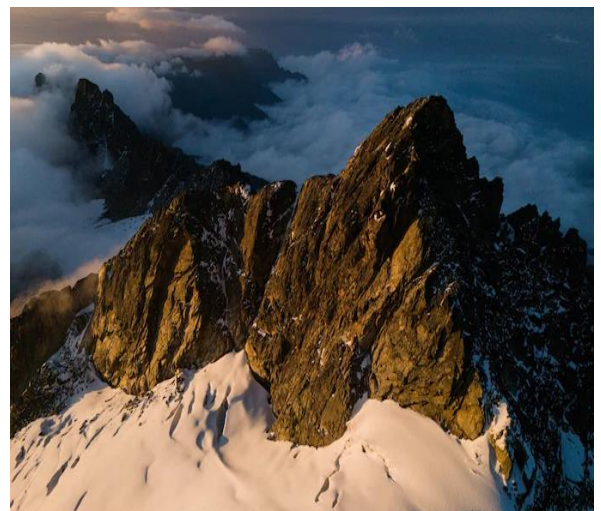
ice on Mount Kenya in the next 30 years.



Glaciers Of Mount Kenya
(Image source: Shadows of Africa)

The Rwenzori Mountain range straddles equatorial East Africa, bordering Uganda and the Democratic Republic of Congo. Despite their proximity to the world's main latitude, the equator, the Rwenzori Mountain ranges have a dense ice sheet that appears on only three mountains, covering an area of about 0.5 square miles.

In the early 20th century, there were 43 named glaciers spread over six mountains covering about 2.9 square miles. The number has now declined to only four peaks: Elena, Stanley, Baker, and Speke peaks, which are predominantly covered in ice all year-round. It is estimated that the glaciers on Mount Speke will completely disappear in the next 40 years, leaving only three glacial points on the Rwenzori due to climate change and high temperatures.



Glaciers of the Rwenzori Mountains
(Image source: The Telegraph)

For Africa, the retreat of glaciers in other parts of the world contributes to sea-level rise, which can affect coastal communities through increased flooding and erosion. In particular, the loss of glaciers on Mount Kilimanjaro, Mount Kenya, and the Rwenzori Mountains poses not only an environmental concern but also a socio-economic crisis in the making. These glaciers, though small in comparison to those in the Arctic or Himalayas, are lifelines for local communities. They regulate water flow, support biodiversity, and contribute to the continent's hydrological cycles. Their disappearance would worsen water scarcity, particularly in arid and semi-arid regions, and undermine efforts to mitigate water scarcity in Africa.

As we observe World Water Day 2025, the theme of glacier preservation serves as a stark reminder of the urgent need to address climate change and its impact on water resources. Therefore, World Water Day 2025's focus on glacier preservation is highly relevant to Africa. Preserving glaciers is essential not only for regions with significant glacial coverage but for the entire continent, as the impacts of glacial melt are interconnected with global water

systems and climate patterns.

The above situation underscores the broader message of World Water Day 2025: the necessity for global action and integrated water resources management (IWRM) to sustainably preserve glaciers and manage meltwater, while acknowledging the interconnectedness of ecosystems, climate, and human activity. It also provides an opportunity for Africa to showcase innovative solutions by blending traditional knowledge with modern technology for glacier preservation and effective water management through sound policies that engage and empower local communities to take ownership of their natural resources.

References:

1. [World Atlas](#)
2. [UN World Water Day](#)
3. [UN-Water](#)
4. [UNESCO](#)
5. [Global Water Partnership](#)
6. [EPR Waste Association of South Africa](#)
7. [Science X](#)

Contributor:

Yusuf Ali MOHAMMED, a PhD Candidate at Anadolu University, Türkiye.

Water Governance and Security in Africa



Image Source: Water Security Africa

Water is a strategic resource that shapes economic development, food security, and social stability worldwide. In Africa, where more than 300 million people lack access to safe drinking water, water security remains one of the continent's most pressing challenges. From North Africa's arid climate and transboundary disputes over the Nile to Sub-Saharan Africa's seasonal variability, weak infrastructure, and rapid urbanization, Africa faces a complex set of hydropolitical, environmental, and governance challenges. Addressing these requires regional cooperation, policy innovation, and sustainable water management strategies.

Fragmented Policies and Emerging Reforms

Governance plays a pivotal role in water accessibility, allocation, and conflict resolution. African water governance is largely fragmented, with overlapping policies at national, regional, and international levels. Many countries rely on outdated legal frameworks that fail to account for climate variability, population growth, and transboundary tensions.

1. North Africa: The region faces high water stress, exacerbated by desertification, inefficient water use, and political instability. Countries like Egypt, Algeria, Morocco, and Tunisia have adopted large-scale desalination projects and water reuse

initiatives, yet challenges in governance persist, particularly in transboundary river basins like the Nile and Medjerda Rivers. The Grand Ethiopian Renaissance Dam (GERD) continues to fuel tensions between Egypt, Sudan, and Ethiopia, underscoring the urgent need for regional hydrodiplomacy.

2. Sub-Saharan Africa: Governance issues in West, East, and Southern Africa center on inadequate infrastructure, weak institutions, and lack of integrated water policies. The Volta, Niger, Congo, and Zambezi basins are crucial for economic activities but suffer from unregulated extraction, pollution, and lack of transboundary coordination. In response, regional bodies such as the African Ministers' Council on Water (AMCOW) and the Southern African Development Community (SADC) are advocating for water-sharing agreements and community-driven governance models.

Climate Change

Climate change is intensifying Africa's water insecurity by altering rainfall patterns, increasing droughts, and accelerating desertification. The Sahel region is experiencing prolonged dry spells, threatening agriculture and livelihoods. Meanwhile, the Horn of Africa (Ethiopia, Somalia, and Kenya) is enduring frequent

drought cycles that exacerbate humanitarian crises. In contrast, Mozambique and Sudan have faced severe flooding, displacing millions.

To counteract these threats, African nations must:

- Strengthen climate-resilient water management policies.
- Invest in adaptation systems for drought and flood mitigation.
- Expand sustainable water harvesting and storage technologies.

Gender, Youth, and Indigenous Knowledge in Water Management

Water governance in Africa must be inclusive, integrating women, youth, and indigenous communities into decision-making processes. Women, who bear the brunt of water scarcity (spending up to six hours daily collecting water in some regions), must be empowered through policy inclusion and capacity-building programs. Indigenous knowledge, which has sustained nomadic and farming communities for centuries, should be leveraged to develop nature-based solutions such as rainwater harvesting and traditional irrigation systems.

Lessons from Global Water Management for Africa

Africa can adopt key lessons from global case studies, such as:

- Australia's Murray-Darling Basin Model – showcasing successful transboundary river management.
- Gulf Countries Water Recycling & Desalination Techniques – demonstrating how technology can address water scarcity.
- The European Water Management Models – offering a regulatory model for integrated river basin management.
- Türkiye's Southeastern Anatolia Project (GAP) – Initiates a multi-sector integrated regional development project based on the concept of sustainable development

Türkiye and HPA's Role in African Water Management

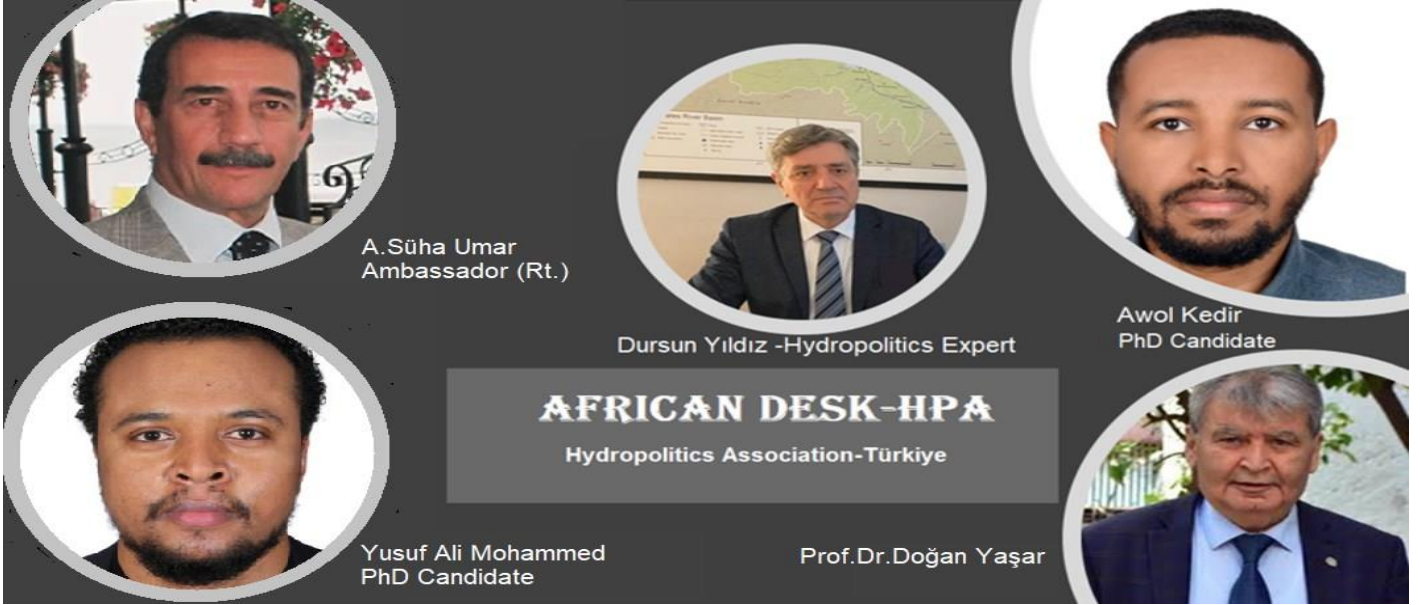
Türkiye has played an active role in water and development initiatives across Africa. The initiatives by government aid organizations and various NGOs are significantly enhancing access to safe water across the continent. Türkiye's involvement in agriculture, hydropower, and water diplomacy projects can help shape Africa's sustainable water future. HPA's initiatives, such as capacity-building programs, policy dialogues, and hydropolitical research, can further facilitate knowledge-sharing and institutional collaboration.

Conclusion: Toward a Sustainable Water Future

Africa's water future hinges on regional cooperation, technological advancements, and inclusive governance. Addressing governance gaps, mainstreaming climate resilience, and leveraging indigenous knowledge will be critical in achieving water security for all. Policymakers, researchers, and civil society must work together to drive forward sustainable water solutions, ensuring that Africa's growing population can thrive in a climate-challenged world.

Contributor:

Awol Kedir Jewaro, a PhD Candidate at Suleyman Demirel University, Türkiye and a visiting fellow at the Technical University of Košice, Slovakia.



22 March 2025

News Coordinator and Co-Editor: Yusuf Ali Mohammed
Content: HPA Technical Unit – www.hidropolitikakademi.org
Editor: Dursun Yıldız

The contents of the articles in this document is the sole responsibility of writers and can in no way be taken to reflect the views of the HPA

<http://hidropolitikakademi.org>
www.hpacenter.org



We need to built a future,
Where people live in harmony with nature

HPA

Think Forward . Lead Forward