

▼ 2,500KM

Wetland coverage. Uganda's total land area is approximately 24.1 million hectares, with more than 14 percent of it being wetlands. Under its National Wetlands Restoration Project II, it is established that the government has been able to demarcate 2,500km of wetlands through planting of pillars.

Experts say the government must invest in afforestation, reforestation and restore degraded wetlands.

BY TOBBIAS JOLLY OWINY

With chronic groundwater over-allocation, land and soil degradation, deforestation and rising pollution, Uganda is increasingly exposed to the growing global threat of water bankruptcy, a crisis that has already left billions of people without reliable access to water or facing severe drought.

Although Uganda remains one of the most water-rich countries in East Africa, endowed with an extensive network of rivers, lakes and wetlands that power the economy and sustain livelihoods, this abundance masks a deepening vulnerability. From catastrophic floods in the west to crippling droughts in the north-east, the country's hydrology is becoming more extreme and unpredictable.

Hydrologists warn that unless the still-reversible situation is urgently contained and better managed, Uganda could join the ranks of water-bankrupt countries within two decades.

A 2025 World Bank report challenged the government to improve management of natural resources, noting that Uganda's primary water sources—Lake Victoria and the River Nile—are shared, with about 35 percent of the country's water resources flowing across borders.

Wetlands, which cover about nine percent of Uganda's land surface, have suffered significant losses. Since 1994, nearly 40 percent have been converted for agriculture and urban expansion. Forest loss has been driven by wildfires, wood extraction for energy and construction.

The National Environment Management Authority (Nema) has gazetted 8,613 wetlands as protected critical ecosystems where encroachment, drainage and pollution are prohibited. Yet despite these measures, the frequency and intensity of climate-related disasters have risen over the past two decades.

Uganda's Country Climate and Development Report says reversing the trend will require improved climate, meteorological and hydrological data collection, wider public access to such data, and stronger integration of scientific analysis into decision-making. It also calls for systemic reductions in fuelwood and charcoal use.

"To curb forest degradation and conversion, Uganda needs to accelerate the transition to clean cooking. More than 20 percent of households use charcoal as their primary cooking fuel, and 73 percent use firewood," the report says.

Hydrological system under strain

Uganda is home to more than 160 major rivers, forming a vast, interlinked hydrological system stretching over rough-

Uganda left on the edge as water bankruptcy beckons



Police arrest people found mining sand from a wetland illegally. Wetlands, which cover about nine percent of Uganda's land surface, have suffered significant losses. PHOTO/FILE

ly 8,000 kilometres. These rivers drain into five major basins, most of them part of the wider Nile system.

The water network supports hydro-power generation at facilities such as Nalubale, Kiira, Bujagali, Isimba, Karuma and Nyagak, while also supplying irrigation schemes and urban water systems. However, erratic rainfall patterns are placing growing pressure on these systems.

The five main river basins include the Lake Victoria Basin (Upper White Nile) and the Lake Kyoga Basin, which acts as a natural buffer in the Nile system and is fed by rivers such as Sezibwa and Lugogo. Others are the Lake Albert Basin (Lower White Nile); the Lake Edward—George Basin, supplied by rivers descending from the Rwenzori Mountains, including Nyamwamba and Mubuku; and internal drainage basins such as Lake Wamala.

With surface water—including lakes and wetlands—covering nearly 15 percent of its land area, Uganda has one of the highest river densities in the region, surpassing neighbours such as Kenya and Rwanda.

Yet this density has not shielded the country from disaster. Western Uganda, particularly the Rwenzori Sub-region, has experienced recurrent flooding. In 2020 and again in 2023, the Nyamwamba River burst its banks in Kasese District, destroying homes, schools and health facilities. More than 15,000 people were displaced, and vital bridges were washed away.

According to France-based Blue Wa-

THE NUMBERS

50 percent: large lakes worldwide that have lost water since the early 1990s (with 25 percent of humanity directly dependent on those lakes)

50 percent: global domestic water now derived from groundwater

410 million hectares: area of natural wetlands—almost equal in size to the entire European Union—erased in the past five decades

Dozens: major rivers that now fail to reach the sea for parts of the year

75 percent: global population in countries classified as water-insecure or critically water-insecure

\$5.1 trillion: annual value of lost wetland ecosystem services

3 billion: People living in areas where the total water storage is declining or unstable

ter Intelligence (BWI), Uganda's water systems are increasingly shaped by climate-driven extremes, both floods and droughts, with devastating consequences for livelihoods, infrastructure and food security. These floods, BWI notes, were worsened by rapid snowmelt from Rwenzori glaciers combined with intense rainfall—signals likely to intensify

as climate change accelerates.

In 2022, the Ankole—Masaka corridor experienced damaging rainfall delays that triggered critical water shortages. The Ministry of Agriculture estimated a 40 per cent drop in milk production, with economic losses exceeding Shs20 billion.

A global crisis

In January 2026, the United Nations University's Institute for Water, Environment and Health (UNU-INWEH) declared the dawn of a global era of water bankruptcy. The report explains how many societies have overspent their annual renewable water "income" from rivers, soils and snowpack, while also depleting long-term "savings" held in aquifers, glaciers, wetlands and natural reservoirs.

This has resulted in compacted aquifers, land subsidence in deltas and coastal cities, vanished lakes and wetlands, and irreversible biodiversity loss, says Mr Kaveh Madani, lead author of the report and Director of UNU-INWEH.

"While not every basin and country is water-bankrupt, enough critical systems around the world have crossed these thresholds," Mr Madani says. "These systems are interconnected through trade, migration, climate feedbacks and geopolitical dependencies, so the global risk landscape is now fundamentally altered."

As millions of farmers struggle to produce food from shrinking, polluted or disappearing water sources, Mr Madani warns that without rapid transitions to

water-smart agriculture, water bankruptcy could spread even faster.

UN Under-Secretary-General Tshilidzi Marwala, Rector of UNU, says water bankruptcy is not just a hydrological problem but also a justice issue.

The report warns that the current global water agenda, largely focused on drinking water, sanitation and incremental efficiency gains, is no longer fit for purpose in many regions and calls for a fundamental reset.

Making inroads

Mr Daniel Otim, a hydrologist and irrigation engineer, says Uganda has strong policies and regulations on paper, but implementation remains the biggest challenge.

"People continue to encroach on forest reserves, wetlands and other protected areas, to the detriment of the country's water reserves and basins," Mr Otim told *Business Outlook*.

"When these forests and wetlands are replaced with crops like sugarcane, the land can no longer recharge natural aquifers. Along the roadside, everything looks fine, but deep inside these ecosystems, extensive encroachment is taking place," he said.

Mr Otim argues that the government must invest more deliberately in afforestation and reforestation, restore degraded wetlands, and promote water-harvesting infrastructure such as valley dams and impounding structures to strengthen climate resilience.

In recent years, Nema has partnered with state agencies and non-governmental organisations to restore degraded wetlands, boosting biodiversity and reducing flood risks. By 2025, about 1.2 million hectares of wetlands had been restored, increasing national wetland cover from about 8.9 per cent in 2021 to roughly 13.9 percent.

In the same year, Uganda had protected 3.4 million hectares—around 13.9 percent—of its wetlands, surpassing Africa's average of three per cent and the global average of six per cent. This ranked Uganda first in Africa and third globally in wetland protection.

Nema says enforcement measures—including evictions, prosecutions, fines and restoration orders—are continuing against wetland degraders. "With these efforts, the country's wetland cover has appreciated from 8.9 per cent in 2019 to 9.3 per cent in 2021 of Uganda's land surface. A total of 1,598 hectares of degraded wetland systems were restored in FY 2023/2024," Nema reports.

Uganda's total land area is about 24.1 million hectares, with wetlands accounting for more than 14 per cent.