



Freetown's Major Source of Water Under Attack!

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Dusty roads and bare fields open up to a growing community in the outskirts of the country's Western Rural Area. This sharply contrasts with the narrow tarmac road and green scenery on either side approximately one and a half miles to the country's major source of water.

It's a beautiful atmosphere here at Mile 13, home to the main Guma Valley Dam. The cold breeze, vast species of trees, and a variety of wildlife make the location a sight to behold.

Unfortunately, this natural habitat will be history in the coming years if state institutions are not fully capacitated to protect it.

The Mile 13 dam, which supplies over 90% of the water for Freetown, the capital of Sierra Leone, is 862 feet above sea level and was built in the 1960s with a storage capacity of 23.3 billion litres to provide water reliably to around 800,000 people.

The current population of Freetown is significantly higher than this. The 2015 Population and Housing Survey suggests that approximately 1,055,964 people lived within Freetown. Inadequate water from municipal systems forces this growing population to seek informal sources, seriously increasing the hazards to health and the risk of disease.

"Sierra Leone's capital Freetown must tackle deforestation, poor housing, and broken-down drainage if it is to prevent the next disaster. Rapid urbanization in the growing city is driving residents to claim any trees and land they can find to build homes, making landslides and flooding more likely in times of heavy rain. Our city has no future if we don't save the environment. The biggest challenge we face is a lack of appreciation of how quickly the deforestation is happening and how far-reaching the impact is on us as a people and as a country," Mayor Yvonne Aki Sawyerr said.

Whilst halting deforestation is a necessary step in the right direction, it will not be enough to fix Freetown's water shortage. The Guma reservoir is vulnerable to climate change. Low rainfall, over-abstraction, and poor infrastructure create a risk of emptying the reservoir and leaving Freetown without any supply, with severe consequences.

Human activity and the growing population in the capital mean the existing water infrastructure for delivering water to Freetown is already stretched with demand for water being far more than the current capacity.

Mariama Jalloh is an environmental officer at the Environment Protection Agency (EPA). She says that the agency has over the years engaged and will continue to engage communities on the negative impact of deforestation and other activities that destroy the environment.

"We have gone to different communities and villages and held sensitisation programmes to inform the community about the dangers of climate change and environmental destruction. We look forward to continuing this work right on to hard-to-reach areas. It is a challenging job because people's livelihood is dependent on some of these destructive activities, but we shall do our best to change their attitudes and perception towards the environment," says Mariama.

Sierra Leone is among the topmost vulnerable countries to climate change, and with an average rainfall of 3,600 litres (the equivalent of about 18 bathtubs) per square metre, per year, flooding affects the country on a recurrent basis.

The devastating flash floods and landslides that killed thousands in Freetown in August 2017 illustrate how the accumulation of plastics in drainage systems, compounded by poor city planning, exacerbates the problem.

At the dam's peripheral, scores of trees have been cut down, mostly for charcoal burning, farming, and the construction of houses. This, according to Abdulai Kamara- a Security officer who has patrolled the dam and the water treatment centre since October 1998, is a major reason responsible for the low water level, particularly in the dry season.

"The forest has been destroyed; they continue to brush and burn the bush, hunt animals, and cut down trees for commercial purposes. As the forest reduces the water level drops." Kamara explains.

However, he notes that they have arrested several people and taken them to the authorities but little or nothing has been done to ensure they don't repeat their action.

“The dam is well kept but we have made several reports of intruders in the forests, who cut down trees and burn charcoal. We have not seen any authority take action against intruders, as the forest reduces we get less water. There are two forest guards recently added to the team but they are not enough,” he laments.

According to the science of climate change, the impacts are likely to continue to affect Sierra Leone in the future. Joseph A. Kaindaneh, an environment expert, says the level of deforestation and encroachment is unimaginable.

"What makes it risky is that it exposes these communities to flooding, landslides, and hampers the country's major water source as these activities lead to a reduction in the water deposit at the dam," he says.

The effects of continued deforestation are quite visible. There is reduced water from the water catchments in the forest, low water levels, and ultimately water rationing. When trees are felled, animals and plants, including micro-organisms that rely on them, eventually die, thus cascading the effect of the loss. The quality and stability of the soil become compromised ensuring that crops will not thrive. Forest loss affects rainfall patterns and the supply of clean water.

A community member, Joseph Kamara, says when they are done cutting the trees they will move over to breaking the stones. This, he continues, is their only source of livelihood because they have no jobs and nowhere else to go.

In 2020, Sierra Leone ranked below the regional average on the Environmental Performance Index 177 out of 180 countries. The country remains particularly vulnerable to the impacts of climate change, including rising sea levels, severe floods, erratic and torrential rainfall, biodiversity loss, and associated environmental risks.

The impact on sectors such as agriculture and fisheries threatens the basis of 60% of the economy and the livelihood of 70% of people, thereby increasing conflict risks. Furthermore, research indicates that habitat destruction correlates with zoonotic diseases such as the Ebola Virus Disease, which renders the fragmentation of Sierra Leone's forests, a global public health issue.

Sulaiman Kamara is a Plant Attendant Mechanic at the Guma Dam. He claims a lot of damage has been done to the facilities and private buildings have been erected there.

“Deforestation and encroachment are the greatest challenges for us, and if not handled immediately, we will have to lose many reservations,” he notes.

He reiterates the need for land space to build another reservoir to avoid water shortage.

Joseph Turay is a community member, he acknowledges that their actions destroy the forest and may lead to disasters but says he has little or no choices. He, however, promises to quit the destruction of the forest if he is gainfully employed.

Samuel O. Atere-Roberts is a Professional Engineer who has called for the development of what he describes as a “Solid Proof Plan”. This he says requires time and effort.

Engineer Atere-Roberts reveals that the current problem with the low water level in the Guma Reservoir is a short-term problem that hopefully will be solved by mother nature as the rains come. However, the

larger medium and long-term problems for providing water to the citizens of Freetown will require a multi-faceted approach that involves both technical solutions and public involvement.

The key challenges he blamed for the current state of affairs include the Explosive Population Growth in Freetown exceeding the combined water treatment and distribution capacity of the Guma Valley Water Company (GVWC), the public attitude towards paying for water services, and the need to educate the masses on the full cost of storing, treating and distributing clean water to citizens of the capital.

He also mentioned the financial management of the GVWC and its ability to recover the full cost of providing water to residents of Freetown, and deforestation which affects the quality and quantity of water accumulated in the reservoirs managed by the company

Similarly, Engineer Andrew Keili identified the problems of poor infrastructure, deforestation, and poor financial viability among others, indicating that there are underlying reasons for all of these.

“There is no doubt that a short to medium term solution involves having alternative impoundment areas, making Guma financially viable having good management and corporate governance will be of immense help. But he says a huge injection of capital is also required. Losses are said to amount to 40% of what is pumped-these are largely due to poor connections and illegal connections-this should be addressed,” Engineer Andrew Keili says.

Although the government is doing a feasibility study to see if pipe water can be transported 60 kilometres (37 miles) to Freetown from the Rokel River, the country’s biggest river, critics say it would be exorbitantly expensive and that the water is too polluted from mining and farming upstream.

Meanwhile, the Guma Valley Water Company is worried about the rampant spate of deforestation ongoing at the Guma Dam Trail at the No. 2 River Community, which has the tendency to expose the Guma Dam which supplies over 90% of potable water to Freetown to severe climate change impacts.

Note:

This article was produced with support from the West African Journalists Association (WAJA) and its partners as part of a Climate Change Reporting Project, ahead of COP26.

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