

Water supply in Uganda

Water security and social repercussions

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Water is the source of life and affects almost every area of human coexistence. It is precisely because of its indispensability that good water management and access to water are of tremendous value. This significance of water is mirrored in international politics: Access to clean water has meanwhile been listed among the so-called “third generation of human rights” and is moreover pursued as one of the United Nations’ Sustainable Development Goals. Failure to address this question of water supply triggers repercussions that go far beyond ensuring the availability of drinking water and that may pose threats to the areas of health, economy and social justice. Blessed with abundant precipitation and natural water reservoirs, the East African country Uganda seems unaffected by these challenges. Nonetheless, a closer look reveals incisive challenges in access to clean water and to sanitation facilities.

Distributed availability of water in regional comparison

Once coined as the “Pearl of Africa” by British Premier *Winston Churchill*, Uganda amazes with fascinating landscapes and variety of nature. *Lake Victoria*, *Bwindi National Park*, *Muchison Falls* or *Rwenzori* mountains – all of these popular locations are home to rich water reservoirs. Numerous rivers and lakes, including the Nile, accommodate the Ugandan population with water. In sum, roughly 15% of Uganda’s surface is covered by freshwater. Additionally, Uganda experiences strong rainfall during the two rainy seasons.

The apparent abundance is misleading: Even though the country encompasses extensive water resources, it suffers from discrepancies of its distribution, which is partially a result of being highly dependent on precipitation. In this, seasonal rainfall causes immense differences in the available amounts of water, so that shortages can occur especially during the dry season. In addition, rainfall and sources of water are unevenly distributed across the country. The annual rainfall varies from 500mm up to 2800mm, depending on the region. Therefore, some regions receive significantly more rain than needed, while regions such as northern Karamoja suffer from water shortages, even during the rainy season. Further aspects such as climate change, urbanisation, industrialisation and population growth increasingly pressure Uganda’s water sector.

Water – a complex phenomenon

The necessity of available water goes far beyond using freshwater and can be seen through numerous dependencies: Water is used in food production as much as in irrigation and animal feeding. While the energy potential of water is used in power plants to generate

electricity and it thus influences economic development, water plays just as much a central role in sanitation and hygiene, thus being invaluable to public health. Moreover, unavailability of clean water correlates with insufficient education, poverty and social inequality. None of these areas can be regarded separately from each other. For instance, industrially tapped water resources are no longer available as freshwater – wastewater may indeed contaminate ground water which has further repercussions for the sectors depending on the cleanliness of groundwater. This is why an apparent improvement of using water in the energy sector, may, for instance, lead to lesser water security overall. Thus, any approach to water usage must be formulated holistically.

It must be acknowledged that water is a finite and highly sensitive resource. This is illustrated through the model of the water cycle, in which rain water becomes groundwater through seepage, returns to the surface via a spring, evaporates and then again falls as rain. This finite resource of water thus demands for sustainable treatment to prevent its contamination. Water also requires mild forms of usage, which minimise complex treatment and which renders water utilisable in a large number of areas.

Concerns of water usage

The country's total water resources constitute one of the highest irrigation potentials in the world, which favours food production in the agricultural sector. However, due to a lack of integrative approaches and inefficient water utilisation, the high potential is not exploited appropriately. Thus, in order to use water more consciously and efficiently, greater attention should be paid to usage of water, especially in areas which lack water. Paying attention to water consumption refers specifically to virtual water; that is water which is “virtually” used in the production of goods. It points out how high the water usage in different parts of food production or energy generation actually is.¹

Additionally, optimised water usage requires an integrative approach, which enables effective usage of water in multiple sectors simultaneously and which allows used water to become usable again – this approach, however, can hardly be found in Uganda. Models and approaches should enable effective and extensive usage of water and contain sustainable treatment mechanisms. For the field of sanitary, it is therefore not only important to create access to clean lavatories and to sinks for washing hands, but also to ensure that wastewater is disposed of and treated properly to avoid contamination damages. To secure effective supply of water, improved awareness and broader understanding of the complex interdependencies of water-related areas are a core concern.

Unsafe water sources and insufficient wastewater management

What does water safety currently look like in Uganda? Generally, access to clean water has proven to be a concern. The National Water and Sewerage Corporation (NWSC) is one of the key actors in treating and supplying water for public use. Water provided by the NWSC does actually fulfil high quality standards, with 99.6% of the provided water meeting national standards for drinking water. In addition, WHO standards for bacterial contamination are reliably met and in 98% of cases the requirements for pH values, chlorine residual and colouring are met. These figures are by no means alarming. They are only put into

perspective by the fact that access to the water treated by the NWSC is not available countrywide.

In fact, a quarter of Uganda's population obtains their drinking water from unsafe sources. In 2012, as many as 10% of the population obtained their drinking water from surface water (from rivers, lakes, unsecured ponds, etc.) - a figure that has only dropped to 8% since then.² Moreover, the percentage of the population with access to NWSC water has only risen by 0.4% since 2013.³ The figures for sanitation are not more encouraging either. According to a UN Wash report, only 34% of the population have access to improved sanitation facilities. Since 1990, this proportion has risen by only 8%, and not at all in urban areas.⁴ In addition, 7% of the population still practice open defecation.⁵

The full extent of the water shortage is mirrored in the fact that 61% of Uganda's population lack access to clean water.⁶ Apart from high dependence of varying precipitation, this issue is worsened through poor expansion of the water network. Less than 10% of the population are connected to this network and thus have to rely on other solutions. The influence of the poorly developed sewage system also explains why the lack of water supply in Uganda is not only a problem in dry areas, but also in large cities, especially in Kampala.

Health risks through water

Lack of water supply and contaminated water are also a source of diseases for the respective population. Cholera and other diarrheal diseases are primarily the result of poor access to water and sanitation. In addition, this lack of access increases the likelihood of further serious diseases such as bacterial infections, malaria and typhoid.

WASH programs and WASH clubs have already indicated that such health hazards can be significantly reduced through programmes focused on water and sanitation. In particular, the number of cholera and other diarrheal infections could be reduced by sensitising the population. At the same time, these programmes also reveal the most striking problem of water management in Uganda: inadequate education. Outbreaks of these diseases are regularly linked to careless usage of water. After a cholera outbreak in the region Kasese in 2011, 94% of those affected admitted that they used water from unsafe sources, in which residents swam and partly disposed of their faeces.

Water security – a social problem

Lack of access to clean water puts especially those who are already in a marginalised position, namely children, women and socio-economically weaker persons, at a disadvantage. The Karamoja and Yube regions, for instance, are both characterised by high poverty and insufficient water supply. The situation in the cities, above all Kampala, is most precarious in the slum areas such as Kisenyi or Katwe. The respective population also cannot come up with the necessary financial means to privately extend water networks or sanitary facilities.

Health effects due to insufficient water safety are especially fatal for disadvantaged populations of Uganda, among which are children. Diseases resulting from water shortage

are among the main factors for a high infant mortality rate.⁷ In addition, children under the age of 5 are the age group with the highest risk of contracting diarrhoea. In the case of Cholera outbreaks children under the age of fourteen are the most vulnerable group as they are most affected by the outbreaks. Under long-term considerations, such factors are not merely a health risk for children but constitute also a social risk due to possible further health effects, medical costs and further impairments.

Moreover, specifically girls are negatively impacted when sanitary facilities are amiss in schools. This can force them to stay at home during their menstrual cycle, thus putting them at disadvantage in their education. Additionally, it has been shown that women working in water-related sectors such as fishery or agriculture are disadvantaged and, in cases of lack of water, women are stronger impacted by the reduction of earnings. Even within families, women are most likely to suffer from thirst or dehydration in case of water shortages.⁸ These gender disparities are widened by existing traditional role models. As women usually carry responsibilities for washing, cooking, fetching water and cleaning, the social pressure on them is high.⁹ Apart from physical diseases, women in areas affected by water scarcity in Uganda also face a 70% higher risk of falling into depression.¹⁰

Insufficient overall outcome

Overall, access to water in Uganda is not satisfactory. Apart from natural causes, lack of awareness, education, sustainable usage and integrative approaches contribute to the problem. This does not only impact the availability of drinking water. Apart from health risks, social consequences which specifically handicap disadvantaged populations have been recorded, as well. Improved water security must thus be established through integrative approaches, aiming, among other, at reducing social tensions and inequalities.

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