ماعت للسلام والتنمية وحقوق الإنسان
Maat For Peace, Development, and Human Rights

Water Weapon and its Impact on Peace and Security in Africa

Concept Paper published on the sidelines of World Water Day

Introduction

Ethiopian policies are centered around the use of water projects, particularly hydroelectric dams, as instruments of war or threats of war against neighboring countries, disregarding international and regional legal rules. Ethiopia's dam statistics and technical studies demonstrate a deliberate disregard for the dangerous repercussions of these dams on various levels: political, security, economic, social, and environmental. World Water Day, held on March 22, 2024 under the theme "Water for Peace," focuses this year on the role of water in establishing global peace, stability, and prosperity.

Maat for Peace, Development, and Human Rights addresses the role of water in promoting and achieving peace while shedding light on the dangers associated with using water as a weapon of war and a threat to regional peace and security in Africa, in its background paper titled "**Water Weapon and its Impact on Peace and Security in Africa**."

Axis I: Overview of World Water Day

Every year, on March 22, World Water Day is organized under the coordination of United Nations Commission on Water Resources. It aims to emphasize the importance of water, governance measures, mitigating threats, addressing increasing scarcity, and working towards the sixth goal of the Sustainable Development Goals, which focuses on "ensuring the availability of water and sanitation services for all by 2030."

In 2024, World Water Day adopts the theme "**Water for Peace**" to highlight role of water in establishing peace, stability, and prosperity at a global level. Disturbingly, global statistics reveal that 2.3 billion people live in countries facing water shortages, more than 3 billion people reside in water-stressed areas, 2 billion people (26% of world population) lack access to safely managed drinking water services, and two-thirds of the global population experience severe water scarcity at least once a year.[1]

Specifically, regarding African continent, academic studies indicate that by 2050, 536 million people out of the 4.4 billion living in transboundary river basins may reside in basins prone to severe conflicts. The most affected areas are likely to be in Africa, including Eritrea, Ethiopia, Rwanda, Uganda, Kenya, Somalia, Burkina Faso, Mauritania, Niger, Mozambique, Malawi, Benin, and Togo.[2]

[1] UN WATER, 'Water for Peace' - World Water Day 2024 campaign launches, Access date march 2024, https://shorter.me/jcazc
[2] SIWI, water and peace , access date march 2024, https://siwi.org/why-water/water-and-conflict/

Axis II: Ethiopian Water Policies as Catalysts for Internal Peace Threats

Ethiopia itself has not escaped the consequences and disasters caused by its water dams. In fact, Ethiopia's planning, construction, and filling of the Grand Ethiopian Renaissance Dam in the "Beni Shankul region" contradict its obligations concerning human rights, including the right of indigenous peoples to self-determination, transparency, development participation, and the freedom to express their informed positions. These policies have faced continuous rejection and repeated condemnation, as they represent a deliberate effort by the Ethiopian government to erase the Arab and Islamic identity of the residents of Benishangul, exclude and marginalize them, and control their wealth and resources.

• Social Threats:

Grand Ethiopian Renaissance Dam (GERD) Federal Office Joint plan reveals several social impacts. GERD construction and filling have resulted in forced relocation of 5,391 families, comprising around 20,000 people, from 14 different locations. These families have been resettled in 17 villages without obtaining the free, prior, and informed consent of the indigenous people. The relocation process disregarded the residents' relationships with their ancestral lands, territories, and cultural heritage that dates back to the 17th century. Furthermore, local communities were not given the opportunity to participate in selecting new sites for resettlement. As a consequence, this has led to the loss of livelihoods, disruption of traditional ways of life, and an increase in poverty rates, resulting in low standards of living.[3]

- This situation has already become a reality, with approximately 3,200 families having been transferred in 2018. If the dam project is completed, it is estimated that an additional 7,380 families from neighboring villages will be forced to relocate.[4]

Environmental Threats:

- Upon completion, GERD and its reservoir, with an estimated storage capacity of about 74 billion cubic meters, pose significant environmental threats. GERD construction puts at risk more than 150,000 to 200,000 acres of arable land beneath the dam lake, as well as approximately 300,000 acres of forests. The impact thereof has already been observed through extensive deforestation, including the clearing of 4,854 hectares of surrounding forests before the second filling. Dam construction will result in the flooding of promising mining areas, containing deposits of gold,

[3] Future dams, Resettlement of Gumuz communities around Ethiopia Blue Nile dam, July 2020, PP-4-20.
[4] KULEUVEN, water urbanism in transboundary regions: the Nile basin and the grand Ethiopian renaissance dam, PP146-150.

platinum, iron, and copper, in the Benishangul region. Moreover, Dam operation leads to the accumulation of large quantities of silt in front of the dam, estimated to range between 300,000 and 400,000 cubic meters annually.[5]

- **Health Threats:**

GERD poses a significant health risk, particularly in the Benishangul region near Egypt and Sudan, where it contributes to the spread of epidemics among the local population. The prevalence of malaria in areas close to dams, covering approximately 5 square kilometers, is estimated to be between 1.6 and 0.7 million cases annually in sub-Saharan Africa. Furthermore, other diseases such as cholera and schistosomiasis are also a concern.[6]

Axis III: Water in Ethiopia and Limits of Use as Anti-Regional Stability Elements

Ethiopia's water policies have repercussions on both the local and regional levels, making water resources a potential source of conflict with neighboring African regions. The African continent is home to 66 transboundary river basins, and within these basins, conflicts are likely to arise due to population growth, increased water usage, and the effects of climate change. Unfortunately, there is currently no effective mechanism for resolving water conflicts and addressing historical disputes. Notably, the Nile Basin, the Juba-Shabelle and Lake Turkana basins, and the Nile Basin are shared

by Ethiopia and serve as primary catalysts for water-related conflicts and disputes.

Ethiopia's reliance on water dam policies to develop its water resources and generate hydroelectric power has become a significant aspect of its internal and external agendas. These policies also serve as a means to exert pressure on its regional neighbors. Notably, these practices have led to a breakdown in negotiations between Egypt, Sudan, and Ethiopia regarding GERD. Egypt declared on December 19, 2023, that the fourth round of negotiations had failed, while Ethiopia announced on September 19, 2023, the completion of the fourth filling, and on January 5, 2024, its intention to proceed with the fifth filling of GERD. The repercussions of these dams extend beyond Egypt, affecting other basins such as Lake Turkana Basin and the Juba-Shabelle Basin, with the potential for increasing conflicts over water resources.[7]

[5] ibid

[6] الأهرام، معهد الدراسات البيئية: أول نموذج هندسي يرصد أثار سد النهضة على مصر، تاريخ الوصول 7، يوليو، 2021، https://bit.ly/36zXiAB

[7] The conversation, 920 million people could face conflict over the world's rivers by 2050: what our study found in Africa, access date March 2024, https://shorter.me/unDMA

1. Egypt:

GERD poses significant threats to peace and security in Egypt, which are becoming increasingly evident over the long term. The following points highlight these threats:

• Threats to Water Needs:

GERD has severe implications for Egypt's water needs. It infringes upon Egypt's historical water rights, reducing its annual share by an estimated (13-25) billion m3. Additionally, there are concerns about water losses from the total flow of (86) billion m3, of which approximately (55.5 and 18.5) billion m3 are divided between Egypt and Sudan downstream. Furthermore, GERD threatens to decrease Egypt's groundwater by approximately 33%, equivalent to (2.14) billion cubic meters annually.[8]

These impacts are particularly severe considering Egypt's water needs, estimated at around (114) cubic meters, and its projected population growth between (2025-2050) estimated at (116-192) million. Egypt's reliance on the Nile River's water is expected to increase by 97%. Meanwhile, Egypt's per capita water share is projected to decline to (550) mm3 by 2021 and further to (400-249) mm3 by (2025-2050). **The fourth filling of GERD in September 2023 threatened to cause Egypt to lose approximately 9-12 billion cubic meters in 2023**, leading to a potential deficit of around 120 billion cubic meters in Egypt's water needs.[9]

• Economic Implications:

GERD has significant economic repercussions for Egypt across various sectors, particularly in industry, commerce, and agriculture. The direct reduction in Egypt's water share poses a severe threat to agricultural activities, which heavily rely on irrigation (99.9%) and consume around (81%) of the country's water resources. As a result, the agricultural sector faces a deficit ranging from (4.2-14.8) billion m3 of water.[10]

Therefore, GERD poses catastrophic threats to Egypt's agricultural sectors, which contribute approximately 15% of the gross domestic product, 20% of total exports, and employ 30% of the Egyptian workforce. Reports indicate that the loss of 5 billion cubic meters of water would affect 1 million acres of the estimated agricultural area out of a total of 8.5 million acres. The justification for the fourth filling implies that any water stored in GERD belongs to Egypt and Sudan, resulting in the first direct loss. Each billion cubic meters of water represents a one-billion-dollar

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[8] هالة السيد هلالي، الأمن المائي المصري: دراسة في تهديدات والمخاطر وأليات المواجهة : سد النهضة نموذجاً، **"مجلة دراسات"**، المجلد(20)، العدد(2)، إبريل 2019، ص104

[9] الشرق الأوسط، ما حجم تأثر مصر من الملء الرابع لـ«السد الإثيوبي»؟، تاريخ الوصول مارس 2024، https://shorter.me/Drob8

[10] بوابة الزراعة، الدكتور عباس شراقي يكتب : سد النهضة. . الضرر أنواع، تاريخ الوصول مارس 2024، https://bit.ly/3H3q3PK

economic return. The unilateral procedures for the fourth filling have limited the rice area to approximately 1.1 million acres, **further exacerbating the food gap, which is currently estimated at 55% of Egypt's total food needs and may rise to 75%.**[11]

• Environmental Threats:

The construction, filling, and operation of GERD entail an inevitable humanitarian catastrophe, including increased drought rates, soil erosion, a rise in salinity by approximately 500-200 parts per million in the High Dam and the Delta, the loss of silt and the nutrients provided by basalt rocks essential for soil fertility, as well as the decline and potential extinction of 12 fish species, which account for 75% of fish production in Egypt.[12]

• Social Threats:

GERD has significant social and humanitarian implications. A reduction of 5 billion cubic meters of water would directly impact the irrigation of approximately 1 million acres of land and affect 1.3 million workers, considering that 55% of Egypt's workforce is dependent on agriculture. This puts around 25% of the workforce, estimated at 6 million workers, at risk.[13]

2. Sudan:

The effects of GERD directly impact Sudan, and these effects can be summarized as follows:

• Threat to Water Needs:

The dam's filling, which is estimated to take around 6 years, would deprive Sudan of approximately 3 billion cubic meters of water, equivalent to about 25% of Sudan's total water share. The water-related impacts of GERD, including its unilateral filling and operation, are escalating in Sudan.[14] This can be seen in the effects of the first unilateral filling in July 2020, which disrupted Sudanese dams and caused water stations to cease operations, leading to water scarcity and drought in Sudan.

On July 15, 2020, Sudan reported a decline in water levels in the Blue Nile River by 90 million cubic meters per day, indicating the closure of GERD gates for the initial storage. A decrease was observed at the "Al-Dim" border station with Ethiopia,

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[11] روسيا اليوم، تصل لمليارات الدولارات.. خبير مصري يحذر من خسائر كبرى بعد بدء إثيوبيا الملء الرابع لسد النهضة، 13 أغسطس 2023، https://shorter.me/Uxx0N

[12] الدكتور جمال صيام يكتب : **الآثار الاقتصادية والاجتماعية والبيئية المحتملة لسد النهضة"بوابة الزراع**ة"، أكتوبر 2017.، https://bit.ly/399hbex

[13] روسيا اليوم، دراسة تكشف عن خطر كبير ستتعرض له مصر من سد النهضة، تاريخ الوصول مارس 2024، https://bit.ly/3pnArfq

[14] ناصر السير ناصر، سد النهضة ووضعه القانوني، وأثاره على الأمن القومي في حوض النيل، "**المجلة العربية للدراسات الأمنية**"، المجلد(33)، العدد(70)، ديسمبر 2014، ص175-180.

and on July 19, 2020, it was announced that there was a sudden decline in the Nile's water flow and drainage, resulting in the shutdown of water stations in Khartoum.[15]

• Economic Threats:

- GERD poses a significant threat, particularly due to Ethiopia's unilateral policies regarding the retention of silt behind the dam's reservoir. This situation jeopardizes Sudan's agricultural sector, which supports approximately 80% of the Sudanese population and contributes 28% to the gross domestic product.[16] Following the completion of the fourth filling in September 2023, reports indicated that the dam prevented the annual silt deposition and soil enrichment in the agricultural lands surrounding the Blue Nile in Sudan, estimated at around one million acres. Consequently, Sudanese farmers will likely face the future challenges of digging irrigation canals, establishing costly irrigation networks, and adapting socially and economically to the new conditions.[17]

• Humanitarian Threats:

- GERD represents a time-sensitive water hazard for the two downstream countries. Standing at a height of 145 meters and a width of 1850 meters, with a water level of 640 meters above sea level, the dam has a low safety margin of 1.5 and a relatively short lifespan of approximately 100-50 years. Projections indicate that the dam's existence could result in the complete submersion of the island and Khartoum, the destruction of Sudanese water dams, and the collapse of water infrastructure, potentially leading to the catastrophic failure of the High Dam.

1. Kenya:

It is worth noting that Ethiopia has a history characterized by unilateral actions and confusion when it comes to constructing dams on international rivers without proper coordination with downstream countries. The Omo River, which flows into Kenya's Lake Turkana, serves as the primary water source for the lake, accounting for about 90% of its water supply. Ethiopia has constructed the "Geba 1," "Geba 2," and "Geba 3" dams on the Omo River, with plans for additional dams such as "Geba 4" and "Geba 5." These dams have repeatedly resulted in catastrophic consequences and existential threats.

Lake Turkana holds immense importance for Kenya, as it is the largest desert lake globally and a vital ecosystem that supports rich biodiversity in the heart of the desert. It serves as a lifeline for half a million Kenyans, providing approximately 90% of their annual water inflow. However, the Ethiopian dams have had detrimental effects on Lake Turkana, both quantitatively and qualitatively.

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[15] الملء الأول لسد النهضة ماذا يعني وماذا يترتب عليه، تاريخ الوصول مارس 2024، https://bit.ly/3qmH8xd

[16] حمدي عبد الرحمن حسن، أزمة سد النهضة :تحدي الهيمنة المائية والمأزق السوداني المصري، **"مجلة دراسات شرق أوسطية"**، العدد(39)، خريف 2020، ص45-55.

[17] https://shorter.me/Uxx0N

- **Economic Threats:**

The Ethiopian dams, particularly the Jeba 3 Dam, pose a significant threat to Lake Turkana, which sustains half a million farmers, herders, and fishermen. These dams have resulted in a reduction in livestock grazing areas, increased soil aridity, and widespread hunger in local communities. The declining water levels in the lake, caused by a 50% decrease in the water flowing from the river due to evaporation behind the dams, have forced the local population to relocate and abandon their land, as it can no longer support their livelihoods.

The increased water salinity in the lake has hurt the lake's ecosystem, leading to the actual recession of the lake shore, particularly in Ferguson Bay, which is a crucial fishing area relied upon by the local community residing along the lake's shores.

- **Security Threats:**

- The decline in water levels poses the risk of population displacement, potentially fueling conflicts between different Kenyan groups and undermining the fragile peace in Kenya. The reduced water levels may compel Kenyan tribes to cross international borders and encroach upon the disputed "Ilemi Triangle" region, where the borders of Kenya, South Sudan, Ethiopia, and Uganda converge. This situation could escalate the conflict regionally.[18]

4.Somalia

Somalia has not been spared from Ethiopia's unilateral and illegal water policies. Being one of the downstream countries of rivers originating from the Ethiopian plateaus, Somalia has experienced a significant decrease of approximately 80% in water levels compared to natural estimates due to Ethiopia's unilateral dam constructions on the "Juba" and "Shabelle" rivers.

- **Economic Threats:**

Ethiopia's actions pose a threat to the water requirements of about one-third of Somalia's population residing in the southern part of the country. On the Shabelle River, the Ethiopian government has presented a comprehensive development plan consisting of 141 irrigation projects from 2001 to 2050, necessitating a water quantity of approximately 2,566 million cubic meters. This amount exceeds the percentage of water that annually flows into Somalia after entering its borders. Similarly, Ethiopia has ambitious visions for the "Jinal Daw" River on the Juba River, planning to establish around 93 agricultural projects by 2035.[19]

[18] المركز المصري للفكر والدراسات الاستراتيجية، التداعيات الإقليمية لسياسة السدود الإثيوبية مرجع سابق، تاريخ الوصول مارس 2024، https://ecss.com.eg/7091/

[19] المركز المصري للفكر والدراسات الاستراتيجية، التداعيات الإقليمية لسياسة السدود الإثيوبية: حالة بحيرة توركانا، تاريخ الوصول مارس 2024، https://ecss.com.eg/7091/

Examining the repercussions of Ethiopian dams in Somalia, it is crucial to consider the "Jinal Dawa" dams. Ethiopia disregarded the African Convention for the Protection of Natural Resources of 1968 and failed to coordinate with Somalia regarding the establishment of the Jinal Dawa project, resulting in a water imbalance upon its operationalization in 2020.

Estimates indicate a decrease in the flow of the Juba River when the Ethiopian Ginal Dawa Dam is operational. The dam reserves half of the total flow in the Juba River, leading to a decrease in the water percentage from 5.8 to 4.8 billion cubic meters, which adversely affects farmers and agricultural herders in the Juba Valley who heavily rely on these resources for their livelihoods. Additionally, drought occurrences in the city of Lok are exacerbated, while the dam reduces water availability for the Fanul and Mogambo Irrigation Projects. Furthermore, Somalia faces challenges in constructing the Bardhir Dam.[20]

[20] رصيف، نهران على وشك الجفاف... هل تستخدم إثيوبيا المياه كسلاح سياسي ضدّ الصومال؟نهران على وشك الجفاف... هل تستخدم إثيوبيا المياه كسلاح سياسي ضدّ الصومال؟، تاريخ الوصول مارس 2024، https://shorter.me/23-2U

Recommendations

1. Ethiopia must adhere to its international and regional legal obligations concerning water and its management. It is urged to abandon its unilateral policies and prioritize the principles of equitable, reasonable, and just benefit without causing harm to downstream countries such as Egypt, Sudan, Kenya, and Somalia.
2. We appeal to countries subject to the report to establish a special regional body for each basin, which engages in the role of reconciling viewpoints and reducing the intensity of conflict between them to limit the possibility of a water war that would harm national and regional peace and security in the region.
3. We draw the attention of Ethiopian government to the need to allow concerned authorities and experts to prepare real, practical and evaluation studies of the risks of its dams, especially GERD, and its repercussions on all political, security and economic levels to achieve solidarity and joint water governance for emergencies.
4. Ethiopia, Sudan, and Egypt must activate water and development partnership measures by resolving problems, agreeing on a sound settlement, and increasing investments in irrigated agriculture and infrastructure projects, and adapting and flexibility to climate change.
5. Ethiopia must commit to activating measures to exchange information and data and support transparency with downstream countries, to prevent wrong estimates and to enhance joint management of emergencies to contain their repercussions in both their forms of drought and floods and prevent their tragedy from recurring.
6. Ethiopia must take a set of practical and serious measures to implement its humanitarian and human rights obligations, especially the rights of the indigenous people in the Benishangul region. This is done by providing full, adequate and appropriate compensation and compensation for the damages resulting from GERD, activating their right to decide and freely develop and dispose of natural resources, and respecting their historical and cultural relationships with the land and the region.
7. Ethiopian government needs to prepare environmental analysis and assessment studies for its water projects and come up with procedures and measures to protect environmental and biological systems and stop deforestation.