

## Weaponizing Water: The Next Big Security Crisis?

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Source: The European Security and Defense Union

### Introduction

Water, a fundamental resource for human survival, has increasingly become a tool of power in geopolitical conflicts and a target for cyberattacks. As climate change exacerbates water scarcity and global demand for freshwater rises, the weaponization of water is emerging as a significant security threat. Water has played a crucial part in shaping human history since the dawn of civilization. From the ancient settlements of Mesopotamia along the Tigris and Euphrates Rivers to the bustling cities that grew along the Yangtze in China, water has imprinted its importance in human society through life sustenance and economic development. However, its centrality to life has also made it a potent weapon in times of conflict. The deliberate manipulation of water resources—whether through contamination, denial of access, or destruction of infrastructure—has been a recurring strategy in warfare throughout history and continues to evolve as a modern security threat.

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This commentary explores the historical and contemporary dimensions of water weaponization, its implications for global security, and strategies to mitigate this growing crisis.

## **Historical Context of water weaponization**

The usage of water as a weapon has been practiced in times of war for a better advantage against any enemy and it has been in use for ages. For example, in 600 BCE, Athenian statesman Solon poisoned the aqueduct supplying water to Cirrha during a military campaign, incapacitating enemy forces and securing victory.<sup>2</sup> Similarly, Julius Ceaser employed hydraulic warfare during the Siege of Uxellodunum in 51 BCE by cutting off the Gauls' access water, forcing their surrender.<sup>2</sup> In recent application of water as a weapon dates back to the World War II in 1943, when British used a tactic of bouncing bomb to destroy German dams in Ruhr region, an operation called "Operation Chastise" which resulted significant civilian casualties and inundation of agricultural areas.

In the modern age, the scenario has not changed at all rather it has taken a new form with devastating consequences. The Islamic State (IS) used dams and reservoirs in Iraq and Syria to control territories and populations while denying water access to adversaries. In one instance, IS captured Iraq's Ramadi Dam in 2015 and cut off irrigation supplies to major cities like Babil and Karbala, severely impacting food production.<sup>3</sup> Similarly, during Yemen's civil war, warring factions have manipulated water resources to exert control over civilian populations.<sup>4</sup> These examples underscore how both state and non-state actors exploit water as a tool of power. It also reveals an alarming pattern: water weaponization is not just an ancient tactic but an increasingly prevalent strategy in modern conflicts. As climate change intensifies water security and global demand for fresh water rises, this practice could escalate into one of the most significant security crises of this century.

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<sup>2</sup> Zafar, Sajjad. "Water as a Weapon of War." | Consilience, March 8, 2020. <https://journals.library.columbia.edu/index.php/consilience/blog/view/192>.

<sup>3</sup> Kohler, Christina. 2020. "An Ancient Practice With a New Face: The Use of Water as a Weapon in Times of Climate Change." PRIF BLOG. August 21, 2020. <https://blog.prif.org/2020/08/21/an-ancient-practice-with-a-new-face-the-use-of-water-as-a-weapon-in-times-of-climate-change/>.

<sup>4</sup> Risi, Lauren Herzer. n.d. "The Global Challenge of Water's Weaponization in War: Lessons From Yemen, Ukraine, and Libya." New Security Beat. <https://www.newsecuritybeat.org/2024/03/the-global-challenge-of-waters-weaponization-in-war-lessons-from-yemen-ukraine-and-libya/>.

## Contemporary Incidents of Water Weaponization

### Russia-Ukraine Conflict

The ongoing war in Ukraine offers stark examples of state-sanctioned water weaponization. Russia's destruction of the Nova Kakhovka Dam displaced thousands and disrupted water supplies for over one million people. The dam's collapse also had severe agricultural repercussions, as the Kakhovka Reservoir was vital for irrigation-dependent farming in southern Ukraine. Additionally, attacks on civilian water infrastructure have exacerbated public health crises by increasing the risk of waterborne diseases.<sup>54</sup>

### Yemen's Water Crisis

In Yemen, warring factions have manipulated access to water resources to gain leverage over civilian populations. For instance, Houthi forces have deliberately shut off valves supplying water to government-controlled areas, while government-backed forces have exploited water infrastructure to generate revenue for military operations. These actions have turned water into both a military target and a source of economic control.<sup>56</sup>



Source: Atlantic Council

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<sup>5</sup> "The Global Challenge of Water's Weaponization in War | Planetary Security Initiative." n.d. <https://www.planetarysecurityinitiative.org/news/global-challenge-waters-weaponization-war>.

<sup>6</sup> Politics Today. 2024. "The Weaponization of Water in Conflict Zones: A Global Crisis Unfolds - Politics Today." Politics Today. March 25, 2024. <https://politicstoday.org/the-weaponization-of-water-libya-yemen-ukraine/>.

## Libya's Water Challenges

Libya has faced a different kind of water weaponization, with catastrophic consequences. A decade of protracted conflict led to poor resource management and deteriorating infrastructure. The unusually heavy rains brought by Storm Daniel collapsed two dams, releasing an estimated 30 million cubic meters of water and magnifying the dangers created by infrastructure that is neither conflict nor climate-resilient.<sup>56</sup>

## ISIL's Use of Water in Iraq and Syria

The Islamic State of Iraq and the Levant (ISIL) has also employed water weaponization in Iraq and Syria. By controlling water resources, ISIL strengthened its territorial control and manipulated local populations. This strategy highlights how non-state actors can exploit water scarcity in politically unstable environments to enhance their power.<sup>7</sup>

## Bangladesh: Climate Change and Water Security Challenges

Bangladesh, one of the most climate-vulnerable countries globally, faces significant challenges in maintaining water security due to the impacts of climate change. The country's geography, with its extensive riverine and coastal regions, makes it particularly susceptible to climate-related hazards such as flooding, droughts, and salinity intrusion. Coastal regions are particularly at risk, with approximately 30 million people unable to access potable drinking water due to salinity in surface and groundwater. This issue is exacerbated by the contamination of freshwater sources during cyclones and tidal surges, which inundate tube wells and ponds. The salinization of water not only limits access to safe drinking water but also increases exposure to diseases such as hypertension and waterborne illnesses like cholera and diarrhea.<sup>89</sup>

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<sup>7</sup> Cole, Annika (2022) "Weakening of the Nation-State by Climate Change: Water Weaponization by ISIL," *Dartmouth Undergraduate Journal of Politics, Economics and World Affairs*: Vol. 1: Iss. 3, Article 7.

<sup>8</sup> Raza, Wameq Azfar, and Keiko Inoue. 2024. "Water and Health: Impact of Climate Change in 6 Hotspots of Bangladesh." *World Bank Blogs* (blog). March 16, 2024.

<https://blogs.worldbank.org/en/endpovertyinsouthasia/water-and-health-impact-climate-change-6-hotspots-bangladesh>.

<sup>9</sup> Abedin, Md. Anwarul, Andrew E. Collins, Umma Habiba, and Rajib Shaw. 2018. "Climate Change, Water Scarcity, and Health Adaptation in Southwestern Coastal Bangladesh." *International Journal of Disaster Risk Science* 10 (1): 28–42. <https://doi.org/10.1007/s13753-018-0211-8>.



Source: The Daily Star

The health implications of water insecurity in Bangladesh are profound, with women and children disproportionately affected. In coastal areas, where salinity levels have risen alarmingly—exceeding the Food and Agriculture Organization's allowable drinking water limits—the consumption of saline water has led to cardiovascular diseases and other health issues. Furthermore, unpredictable rainfall patterns and frequent flooding compromise sanitation systems, increasing the prevalence of waterborne diseases. For example, diarrhea remains a leading cause of child mortality in Bangladesh, exacerbated by poor access to clean water and hygiene infrastructure. These health crises highlight the urgent need for targeted interventions in water management and public health.<sup>8910</sup>

## **Drivers of Water Weaponization**

Several factors contribute to the increasing use of water as a weapon:

1. **Climate change:** Rising temperatures and changing precipitation patterns are intensifying water scarcity worldwide. This scarcity creates opportunities for actors to exploit water resources as leverage in conflicts.<sup>7</sup>
2. **Population Growth:** Global population growth has led to increased demand for freshwater, further straining already limited resources.

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<sup>10</sup> “How The Climate Crisis Is Impacting Bangladesh.” 2021. The Climate Reality Project. December 9, 2021. <https://www.climaterealityproject.org/blog/how-climate-crisis-impacting-bangladesh>.



3. Geopolitical Tensions: In regions like the Middle East and North Africa, disputes over transboundary rivers and shared aquifers often escalate into broader conflicts.
4. Technological Vulnerabilities: The digitization of critical infrastructures has exposed water systems to cyber threats, making them attractive targets for state-sponsored hackers and terrorist groups.

## Implications for Global Security

The weaponization of water and the broader challenges posed by water insecurity have profound implications for global security, intensifying humanitarian crises, economic instability, and geopolitical tensions. Climate change, population growth, and mismanagement of resources are contributing to the intensified water scarcity, which is increasingly becoming a driver of conflict and migration. According to World Bank, water scarcity could cost some regions up to 6% of their GDP by 2050 due to its impact on agriculture, health, and income. This economic strain often triggers social unrest, as seen in parts of the Sahel and the Middle East, where droughts and food price spikes have inflamed latent conflicts and driven waves of migration.<sup>1112</sup>

Water insecurity also heightens geopolitical tensions over shared resources. Transboundary river systems such as the Nile, Mekong, and Indus Rivers are critical lifelines for multiple nations but are increasingly contested due to declining water availability. For instance, disputes between Ethiopia, Sudan, and Egypt over the Grand Ethiopian Renaissance Dam (GERD) highlight how upstream water infrastructure projects can escalate into regional conflicts. Similarly, in South Asia, tensions between India and Pakistan over the Indus Waters Treaty have intensified as climate change reduces river flows. These disputes underscore how water scarcity can act as a "threat multiplier," exacerbating existing political and territorial conflicts.<sup>1314</sup>

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<sup>11</sup> World Bank Group. (2023). High and dry: climate change, water, and the economy. In *World Bank*.

<https://www.worldbank.org/en/topic/water/publication/high-and-dry-climate-change-water-and-the-economy>

<sup>12</sup> United Nations. (2023). *Water scarcity, the climate crisis and global food Security: A call for Collaborative action* | United Nations. <https://www.un.org/en/un-chronicle/water-scarcity-climate-crisis-and-global-food-security-call-collaborative-action>

<sup>13</sup> "What Is Water Security and How Is It Impacted by Climate Change? - Grantham Research Institute on Climate Change and the Environment." 2024. Grantham Research Institute on Climate Change and the Environment.

## Strategies for Migration

To address the growing threat of water weaponization and its global implications, a multi-pronged approach is essential. Strengthening cybersecurity is a critical first step, particularly for protecting water infrastructure from cyberattacks. Governments must modernize outdated water utility systems by implementing advanced technologies, such as air-gapped networks, encryption protocols, and real-time monitoring systems. Training personnel to manage cyber risks and conducting regular audits can further fortify defenses.



Source: South Asian Voices

On an international level, fostering cooperation through treaties and agreements is vital to prevent conflicts over shared water resources. Expanding existing frameworks like Geneva Conventions to explicitly prohibit attacks on civilian water infrastructures during armed conflicts could deter the weaponization of water. Additionally, countries sharing transboundary rivers or aquifers i.e. India and Bangladesh, should engage in cooperative management agreements to resolve disputes peacefully. Initiatives such as the Nile Basin

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August 16, 2024. <https://www.lse.ac.uk/granthaminstitute/explainers/what-is-water-security-and-how-is-it-impacted-by-climate-change/>.

<sup>14</sup> United Nations Environment Program. n.d. "Climate Change, Water Scarcity and Security." UNEP. <https://www.unep.org/news-and-stories/speech/climate-change-water-scarcity-and-security>.

Initiative and the Indus Waters Treaty demonstrate how regional cooperation can mitigate tensions and promote equitable resource sharing.<sup>15</sup>

## **Conclusion**

The weaponization of water is an alarming trend with far-reaching implications for global security. From physical attacks on dams to sophisticated cyber intrusions targeting municipal utilities, the deliberate manipulation of this essential resource threatens human lives, economic stability, and environmental sustainability.

As climate change intensifies competition over dwindling freshwater supplies, nations must act decisively to address this emerging crisis. Strengthening cybersecurity measures, fostering international cooperation, and investing in climate-resilient infrastructure are critical steps toward mitigating the risks associated with weaponized water. Ultimately, safeguarding access to clean and reliable water is not just a humanitarian imperative—it is a cornerstone of global security.

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<sup>15</sup> “India and Bangladesh Must Address Climate Migration Together.” 2024. Climate-Diplomacy. April 16, 2024. <https://climate-diplomacy.org/magazine/environment/india-and-bangladesh-must-address-climate-migration-together>.