From Palms to Sands: How Climate Change Is Destroying Green Yemen

by Muneer Bin Wabar **(/experts/muneer-bin-wabar)**

Oct 16, 2024
Also available in
العربية (/ar/policy-analysis/mn-alnkhyl-aly-alrmal-kyf-ydmr-tghyr-almnakh-alymn-alakhdr)

ABOUT THE AUTHORS

Muneer Bin Wabar (/experts/muneer-bin-wabar)

Muneer Bin Wabar is a journalist and content creator who holds a Bachelor's degree in Media, specializing in Public Relations, from Yemen's University of Science and Technology. He also holds a Master's degree in International Relations, specializing in Strategy and Security, from India's Jandal University. He is the founder of Yemen Watcher, an organization focused on Yemeni affairs.

Brief Analysis

Yemen is experiencing brutal cycles of drought and deluge, a dangerous combination for a people already facing severe food insecurity.

Fifteen years ago, there was a small village in Hadramaut named Al-Makhbiya, a name that translates to "The Hidden." The village was named for the forest of palm trees that enshrouded it, but today that palm forest no longer exists, and many families have abandoned the village. This is just one example of the many Yemeni communities affected by climate change, whose vibrant green landscapes have been replaced with sand and desolate mud.

Water scarcity and **desertification (https://reliefweb.int/attachments/226ce2eb-910f-4b08-bcc3-215efc62f0b2/YSEU%2074-Arabic%20version.pdf)** are among the most complex challenges facing Yemen. The country suffers from chronic water shortages and a high rate of desertification, not to mention natural disasters like floods, droughts, and changing weather patterns such as rising temperatures. All these challenges negatively impact the country's infrastructure, economy, food production, and the spread of diseases, painting a bleak future for Yemenis who are already relentlessly being pushed to the brink of famine.

Estimates **(https://reliefweb.int/attachments/7ae8ada3-2a4b-4e57-be11-0699ce7ea616/Climate%20Change%20Impacts%20on%20Yemen%20and%20Adaptation%20Strategies-final%20version.pdf)** suggest that the rate of desertification and deforestation in Yemen increased from 90% in 2014 to 97% in 2022. During this year's dry season and rainy period in Yemen, temperatures **rose sharply (https://www.yemenwatcher.org/en/post/yemen-faces-increasing-climate-challenges-we-must-shift-to-sustainable-adaptive-strategies)** in June; the country experienced a steep decline in rainfall then a deluge later in July and August, with both periods affecting agriculture and the livelihoods of people in rural areas.

Severe drought this year has stressed crop yields and reduced agricultural productivity, forcing many farmers to

suspend their work. Others resorted to increased well pumping, degrading the long-term viability of water resources. Rising temperatures and increased dust have worsened health problems, especially for the elderly and those with respiratory illnesses. During the subsequent rainy season, floods **damaged (https://www.yemenwatcher.org/en/post/flooding-in-yemen-a-devastating-blow-to-agriculture)** large agricultural areas, slashing food production in Yemen and driving up prices.

Climate change also severely impacts displaced populations and places significant pressure on the resources of host communities. Today, estimates suggest that there are **4.5 million (https://reliefweb.int/attachments/db6c8508-3fd1-4763-9795-83d32e93133a/IDP%20Protection%20Monitoring%20Snapshot%20June%202024.pdf)** internally displaced people in Yemen. While conflict is often the **primary driver (https://reliefweb.int/attachments/f6d14b08-4769-4ef1-86c0-5c84de353774/ar-iom-yemen-dispach-december-2023_0.pdf)** of displacement, climate change cannot be overlooked as a significant force uprooting communities. According to a **study (https://www.undp.org/yemen/publications/impact-climate-change-human-development-yemen)** published by the United Nations Development Program (UNDP) in late 2023, Yemen faces several complex and multifaceted development challenges, with climate change acting as a multiplier of uncertainty and severely constraining the country's future. The study indicates that in a scenario where climate change continues on its current trajectory in Yemen, the country stands to lose $93 billion in GDP by 2060.

The catastrophic damage from this year's rainy season serves as a stark example of the threat posed by climate change. **Severe flooding (https://edition.cnn.com/2024/08/30/middleeast/yemen-deadly-flood-damage-home-intl-hnk/index.html)** killed at least 97 people in August 2024 and exacerbated food shortages for millions already displaced by years of war. The floods also damaged at least 56,000 homes across Yemen, while some 33,000 families have been impacted since the start of the monsoon season in mid-July.

Moreover, refugees in Yemen are acutely affected by food insecurity: reports indicate that 85% of displaced families are unable to meet their daily food needs. **The United Nations High Commissioner for Refugees (UNHCR) (https://edition.cnn.com/2024/08/30/middleeast/yemen-deadly-flood-damage-home-intl-hnk/index.html)** has stated that the flooding season has added to the already precarious situation of 4.5 million internally displaced Yemenis also grappling with rising food prices across the country.

In addition to small agricultural villages and communities in Yemen, major cities like Sana'a and Aden have not escaped the repercussions of climate change. While some effects (like floods) can be immediate and obvious, others (such as drought) can take decades before communities feel their devastating impact. Reports suggest, for example, that Yemen's water consumption rate exceeds its renewal rate: the water wells supplying Sana'a are on the **verge of drying up (https://reliefweb.int/attachments/c63c9d9b-3a47-45cb-8f2e-7c99b55347be/Water%20Day%20Opinion%20(Final)%20(003).pdf)** . Additionally, the coastal city of Aden—the temporary capital of the country—is the **sixth most vulnerable city (https://reliefweb.int/attachments/7ae8ada3-2a4b-4e57-be11-0699ce7ea616/Climate%20Change%20Impacts%20on%20Yemen%20and%20Adaptation%20Strategies-final%20version.pdf)** in the world to rising sea levels. This rise in sea levels causes saltwater intrusion, rendering coastal aquifers salty and undrinkable.

The story of Al-Makhbiya is not just the tale of a Yemeni village gradually disappearing but a reflection of the tragedy faced by many communities that are left to confront existential challenges brought by climate change. Yemen, long known as "Happy Yemen" for its greenery, is now dealing with the consequences of a rapidly warming planet, a process in which it played no significant role.

The role of local organizations and their collaboration with global efforts is crucial to saving Yemenis from water scarcity. In 2023, for instance, the Abs Development Organization in Hajjah Governorate **succeeded**

(https://reliefweb.int/attachments/2f114776-0b48-41b8-91ae-9cad72f88316/Success%20Stories_20240505_en.pdf) in providing safe and affordable drinking water to about 3,885 people in Abs District by establishing a solar-powered water purification station. Dozens of projects are also being implemented to rehabilitate water networks in the western coastal areas of Yemen, led by the local community and funded by the United States Agency for International Development (USAID). Such interventions and cooperation not only provide safe water for the population but also aim to mitigate water-related conflicts and enhance the local community's capacity to manage disputes.

However, this assistance is unable to meet Yemen's pressing needs. In July 2024, the number of active relief organizations in Yemen reached **113 (https://reliefweb.int/attachments/6a4fc351-e09c-47c4-9dd7-06cccd9d59cf/Humantrian%20Presence%20July%202024%20Ar.pdf)**. These groups operate in various regions to implement a wide variety of humanitarian response plans. Among these organizations, 31 work in the water and sanitation sector. However, only 29.4% of the required $2.71 billion for these plans has been **funded (https://reliefweb.int/attachments/2fca4c28-264a-4dd8-8134-8c457c9bbbe9/YHRP_funding_status_04%20Sep%202024.pdf)**, meaning that virtually all relief organizations working in Yemen are facing severe funding shortages. For example, the water and sanitation sector have a deficit of $141.3 million as of September 2024.

Addressing Yemen's water crisis requires combined local and international efforts. The government, local communities, and international organizations must work together to develop and implement strategies to adapt to climate change, invest in renewable energy projects, and manage water resources sustainably. Additionally, the international community must provide financial and technical support to Yemen, helping it build resilience against climate shocks. This begins with increasing funding for the humanitarian response plans in Yemen. Without adequate resources and strong governance, the status quo will either prevail or—more likely—worsen. The list of potential problems resulting from water scarcity includes increasing conflicts over water resources, higher costs for water extraction and delivery, worsening drought, and rising sea levels.

Efforts should focus on training local communities to manage water resources and improve their efficiency. This can be achieved by conducting a comprehensive assessment of water resources and developing integrated management plans, in addition to implementing modern irrigation techniques, rehabilitating water infrastructure, and promoting drought-resistant agriculture. Longer-term and potentially more costly interventions include diversifying water sources through rainwater harvesting projects, seawater desalination plants, and using treated wastewater. Finally, the plans should include combating desertification, expanding green areas, and raising community awareness about the importance of water conservation and environmental protection.

The success of saving Yemen from the current and future water crises depends primarily on ending the current armed conflict, securing financial and technical support from donor countries and international organizations to implement water projects. Yemen can also work to build partnerships with other countries facing similar issues to exchange expertise and technology, and increase community participation to better understand the problems and priorities and adopt the most effective solutions. ❖

ARTICLES & TESTIMONY

The Real Purpose of a U.S.-Saudi Security Agreement

Oct 17, 2024

◆

Michael Singh

(/policy-analysis/real-purpose-us-saudi-security-agreement)

BRIEF ANALYSIS

A Partnership Worth Preserving

October 22, 2024, starting at 12:00 noon EDT (1600 GMT)

◆

Reuven Rivlin,
Jawad al-Anani

(/policy-analysis/partnership-worth-preserving)

The Ship Operators Shrugging Off Houthi Attacks

Oct 16, 2024

◆

Noam Raydan

(/policy-analysis/ship-operators-shrugging-houthi-attacks)