

## Water and sanitation

### should never be used as a means of warfare.

In spite of the humanitarian, legal and political consensus, water resources and infrastructure are often strategic targets, and their control is being deployed, directly or indirectly, as tactics of warfare by parties to conflicts (offence and defense). Vulnerable groups such as women, children, youth, and persons with disabilities, are usually the most affected by destruction of infrastructure, disruption of water, sanitation and hygiene services, and deterioration of the water-dependent ecosystems and environment.



Water is a victim in armed conflicts, with direct impacts including destruction of water, sanitation and hygiene (WASH) infrastructure, deterioration of resources and ecosystems, leading to sickness and death; and indirect impacts including increased social vulnerability, economic problems, militarization, collapse of water management and governance, deteriorating supply and state of the environment.



**Gaza under siege: 'Life has become unliveable'**

Amid a devastating escalation in the region, families in Gaza are struggling to find safe water to drink. It's a problem many have experienced before but, as the escalation stretches on, the lack of water is becoming more acute – and increasingly, a matter of survival.



## To drink or not to drink. That is the question! Challenges to accessing drinking water



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**Blue gold: this is what we could call drinking water these days.** It is leading millions of people around the world to migrate, not in the pursuit of happiness, work or better conditions, but in pursuit of life.

**Does the European Blue Deal<sup>2</sup> foresee millions of climate migrants,** Europe’s regions becoming deserts, or increasing consumption of energy that can’t be produced without consuming huge amounts of water?

Does the green transition see the digital transition in terms of building efficient energy infrastructure, research, innovation and global cooperation on ways to generate energy that follow the “Do No Significant Harm” principle?

Although we are used to always having running water here, the effects of water stress can also be felt in Europe. According to a report<sup>3</sup> by the European Environment Agency<sup>4</sup> , droughts and water shortages affect about 20% of Europe’s territory and 30% of its population every year. Water poverty has become a new category of poverty alongside financial deprivation or energy poverty.

Who is using the most water in Europe? Is it farmers, industry or ordinary people running the proverbial taps? If we look at the use of fresh water, from which we get drinking water, agriculture uses the most (58%), followed by cooling water for electricity production (18%), mining, quarries, construction and manufacturing industries (11%), households (10%) and services (3%) (EEA, report on fresh water use<sup>5</sup> ).

**Therefore, green thinking on the part of consumers in terms of saving or efficient use of water in the spirit of the circular economy is only the tip of the iceberg in terms of possible savings in use of fresh water.** In the case of Europe, agriculture and the manufacturing and energy industries should be the economic sectors that feel the greatest pressure to develop efficient methods of saving water and reducing the pollution that further restricts access to drinking water. **Is it realistic to ensure universal and equitable access to safe and affordable drinking water by 2030, given that according to the United Nations<sup>6</sup> , 50% of adults around the world possess only 1% of its wealth?**

**What is an affordable price for drinking water as social inequalities continue to rise globally?** Access to drinking water must not be a commodity, but a human right – the right of everyone in Europe, and in addition to creating a subsidy scheme for the most vulnerable populations, access to drinking water should also be provided through access to free infrastructure.

1 EESC Social Economy Category, <https://europa.eu/!ht47UK>

2 EESC EU Blue Deal, <https://europa.eu/!6Qhwwf>

3 EEA report ‘Water resources across Europe — confronting water stress: an updated assessment’, <https://europa.eu/!CH3HnR>

4 European Environmental Agency, <https://europa.eu/!XKFrBg>

5 EEA Environmental Indicator Report 2018, <https://europa.eu/!RPPr9g>

6 United Nations, <https://www.un.org/en/>

Source : European Economic and Social Committee Civil Society Organisations’ Bulletin October 2023

# Human-induced climate change compounded by socio-economic water stressors increased severity of drought in Syria, Iraq and Iran

From boreal winter 2020 onwards, a large region in West Asia, encompassing the Fertile Crescent around the rivers Euphrates and Tigris as well as Iran has suffered from exceptionally low rains and elevated temperatures. The resulting 3-year drought has led to severe impacts on agriculture and access to potable water.

In this arid region, a large part of the population depends on rain-fed agriculture, in particular wheat farming and livestock. While there is a comparably large variability in the year to year rain, this drought was the second worst in the observed record, driven by rising temperatures. It hit at a time when other socio-economic factors including the ongoing war in Ukraine with its impacts on energy and food prices, as well as conflicts and political unrest, compound the consequences of the drought.

Scientists from Iran, the Netherlands, the UK and the US used published peer-reviewed methods to assess whether and to what extent the 3-year drought in two regions:

- (1) the fertile crescent around the Euphrates and Tigris rivers, encompassing large parts of Iraq and Syria and
- (2) Iran. There are several ways to characterise a drought: meteorological drought considers only low rainfall, while agricultural drought combines rainfall estimates with evaporation. As increased evapotranspiration due to regional warming can play a major role in exacerbating drought impacts, we assess agricultural drought in this study. The main variable used to characterise the drought is the Standardised Precipitation Evapotranspiration Index (SPEI) which calculates the difference between rainfall and potential evapotranspiration to estimate the available water.

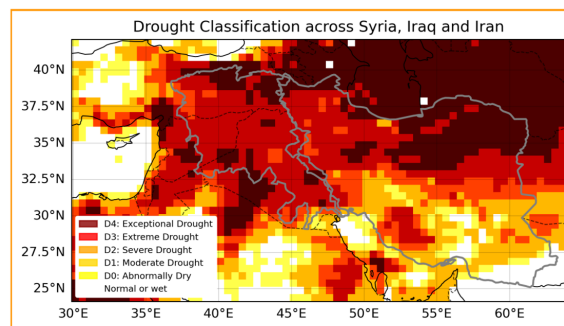
The more negative the values are, the more severe the drought is classified.

Drought classification for the wider West Asia region, categorised according to the US Global Drought Monitor system. The categories are based on the 36-month SPEI values in June 2023. The study regions are outlined in grey, the Tigris-Euphrates river basin on the left and Iran to the right.



## Main findings

The drought affects a region with a highly vulnerable population due to varying degrees of fragility and conflict including war and post-war transition, rapid urbanisation in the face of limited technical capacity, and regional instability. These dynamics increased vulnerability to the impacts of drought and created a humanitarian crisis.



The whole Euphrates and Tigris basin (ET-basin) and large parts of Iran experienced extreme and exceptional agricultural drought over the 36 months up to June 2023, making it the second-worst drought on record in both regions based on SPEI.

The extreme nature of the drought is not rare in the present climate (which has been warmed by 1.2°C due to burning of fossil fuels). Events of comparable severity are expected to occur at least every decade.

Source : <https://www.worldweatherattribution.org/human-induced-climate-change-compounded-by-socio-economic-water-stressors-increased-severity-of-drought-in-syria-iraq-and-iran/>

## Greenland's glacier retreat rate has doubled over past two decade



November 9, 2023- Northwestern University

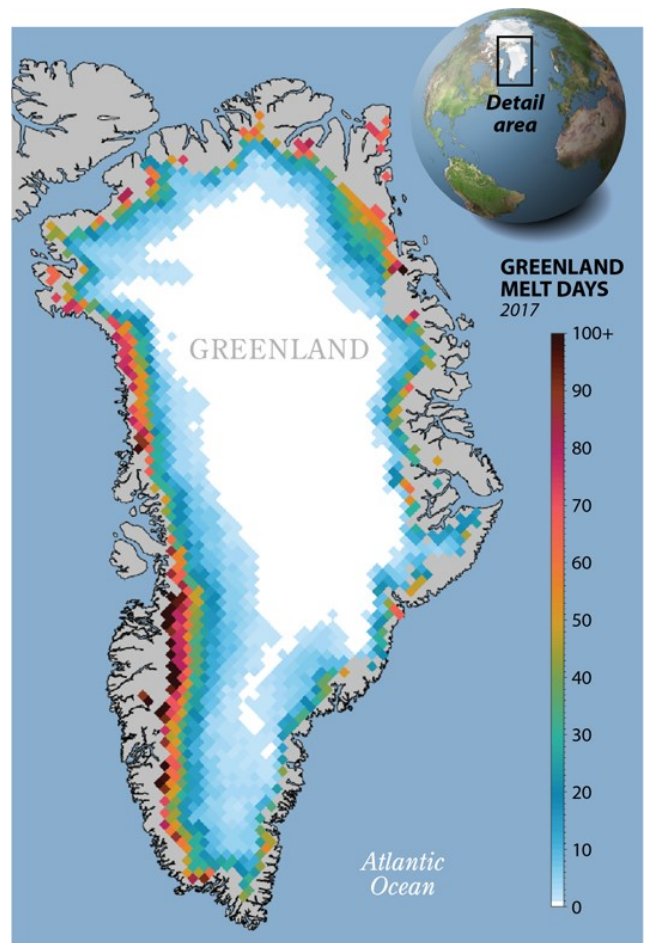
A new study documents how Greenland's peripheral glaciers have changed from 1890 to 2022. Using satellite images and a unique archive of historical aerial photos, researchers documented changes in the lengths of more than 1,000 of the country's glaciers over the past 130 years. Although glaciers in Greenland have experienced retreat throughout the last century, the rate of their retreat has rapidly accelerated over the last two decades.

Greenland's thousands of peripheral glaciers have entered a new and widespread state of rapid retreat, a Northwestern University and University of Copenhagen study has found.

To piece together the magnitude of glacier retreat, the research team combined satellite images with historical aerial photographs of Greenland's coastline, which is dotted with thousands of glaciers that are separate from the island's massive central ice sheet. With these one-of-a-kind data, the researchers documented changes in the lengths of more than 1,000 of the country's glaciers over the past 130 years.

Although glaciers in Greenland have experienced retreat throughout the last century, the rate of their retreat has rapidly accelerated over the last two decades. According to the multiyear collaborative effort between the United States and Denmark, the rate of glacial retreat during the 21st century is twice as fast as retreat during the 20th century. And, despite the range of climates and topographical characteristics across Greenland, the findings are ubiquitous, even among Earth's northernmost glaciers.

The findings underscore the region's sensitivity to rising temperatures due to human-caused climate change.



SOURCE: NSIDC/Thomas Mote, University of Georgia

InsideClimate News

The study was published on Thursday (Nov. 9) in the journal *Nature Climate Change*.

"Our study places the recent retreat of peripheral glaciers across Greenland's diverse climate zones into a century-long perspective and suggests that their rate of retreat in the 21st century is largely unprecedented on a century timescale," said Laura Larocca, the study's first author. "The only major possible exception are glaciers in northeast Greenland, where it looks like recent increases in snowfall might be slowing retreat."

The study finds that climate change explains the accelerated glacier retreat and that glaciers across Greenland respond quickly to changing temperatures. This highlights the importance of slowing global warming.

**Source** : L. J. Larocca, M. Twining–Ward, Y. Axford, A. D. Schweinsberg, S. H. Larsen, A. Westergaard–Nielsen, G. Luetzenburg, J. P. Briner, K. K. Kjeldsen, A. A. Bjørk. **Greenland-wide accelerated retreat of peripheral glaciers in the twenty-first century.** *Nature Climate Change*, 2023; DOI: [10.1038/s41558-023-01855-6](https://doi.org/10.1038/s41558-023-01855-6)

**The book  
 “Water’s flow of Peace”  
 by  
 Prof.Dr. Luis Antonio Bittar Venturi,**



The book "Water's flow of Peace" (Cambridge Scholars Publishing, 2020) has now an Arabic version. The author, Luis Antonio Bittar Venturi, one of our members and professor at Department of Geography (University of São Paulo - Brazil) was in Beirut for the book launch at the Lebanon International Book Fair (13-23 of October).

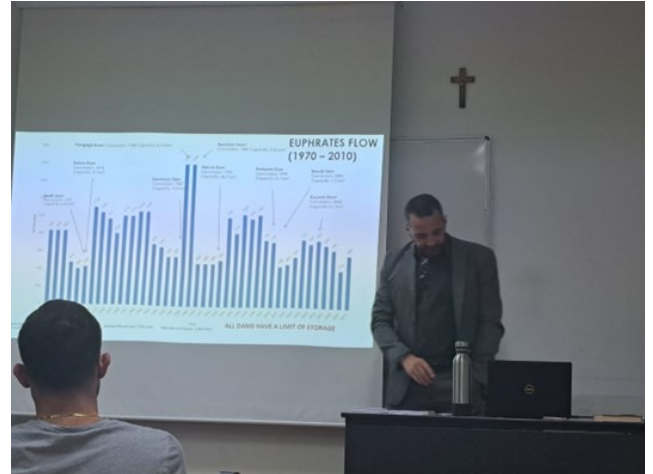
The Arabic version was sponsored by The São Paulo Research Foundation (FAPESP) and by the Guimarães Rosa Institut, a cultural branch of the Brazilian Ministry of Foreign Affairs.



The book had a second launch promoted by the Brazilian Embassy in Damascus (25th Oct), followed by two conferences: first in the Syrian Geographical Society (26th Oct), and a second one at the Université Saint-Esprit du Kaslik de Liban (30th Oct).

The Brazilian Embassy in Syria will distribute the book to all Brazilian embassies in all Arab countries, as well as to respective Ministries of Culture and Education.

Prof. Dr. Luis Antonio Bittar Venturi is a associate member of the Hydropolitics Association of Türkiye. The Hydropolitic Association will soon receive a copy of the book.



# ANTALYA INTERNATIONAL SCIENCE FORUM | ANISF



**CLIMATE CHANGE** Environmental Crisis Migration



29 Nov.-1 Dec 2023 ANTALYA-Türkiye



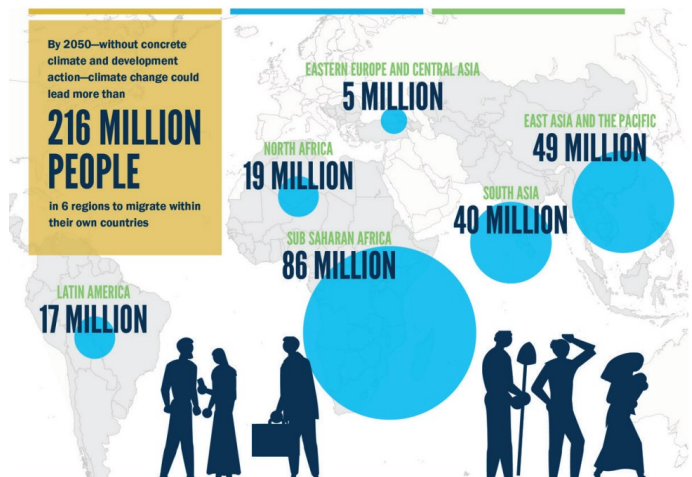
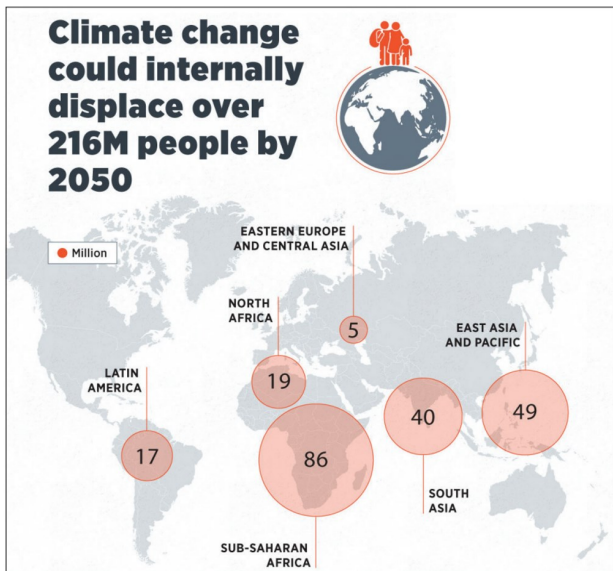
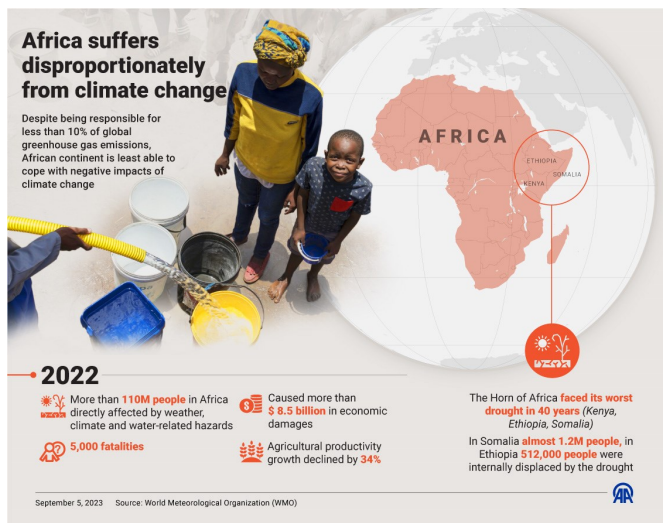
Antalya International Science Forum (ANISF) on "Climate Change, Environmental Crisis and Migration" which is organised in partnership with Antalya Metropolitan Municipality, Friedrich Ebert Foundation Turkey Representation (Istanbul), Centre for Turkish Studies (Germany-Essen) and Hydropolitics Association, as we consider your work and contributions to science valuable.

The Science Forum aims to discuss interdisciplinary approaches and solutions such as "climate resilient agriculture", "circular economy", "right to food", "climate justice", and "environmental law" in the context of global, regional and national impacts of climate change, migration and environmental crisis.

ANISF will bring together experts from different regions of the world and various institutions and organisations, providing a platform for them to share their knowledge and expertise on the impacts of climate change on migration and vulnerable communities, as well as strategies for mitigation and adaptation.

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We need to build a future,  
Where people live in harmony with nature

**HPA**

*Think Forward .Lead Forward*