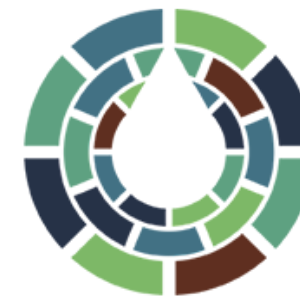




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Water, Peace  
and Security

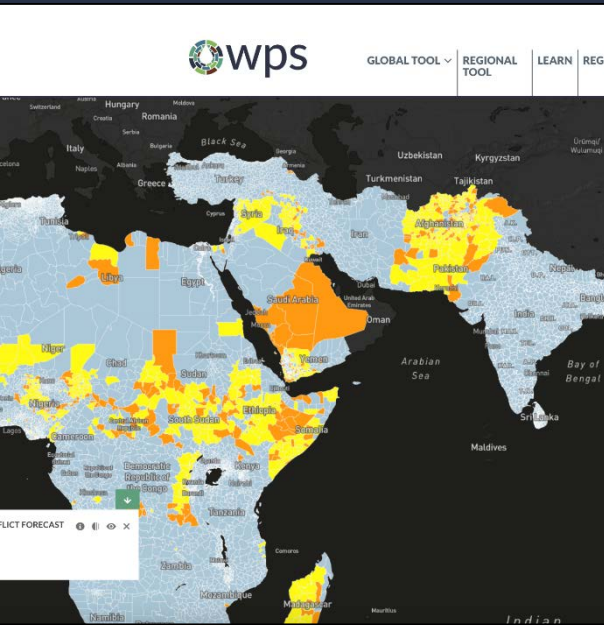
# Water, Peace, and Security

December 6, 2022

CHARLES ICELAND, ACTING WATER DIRECTOR



# The Water, Peace and Security (WPS) partnership aims to address the water-security nexus by



Developing Tools and  
Data

Raising Awareness

Building Capacity

Supporting Dialogue

... In order to try to turn vicious cycles of water insecurity into virtuous cycles of water-based peace and cooperation

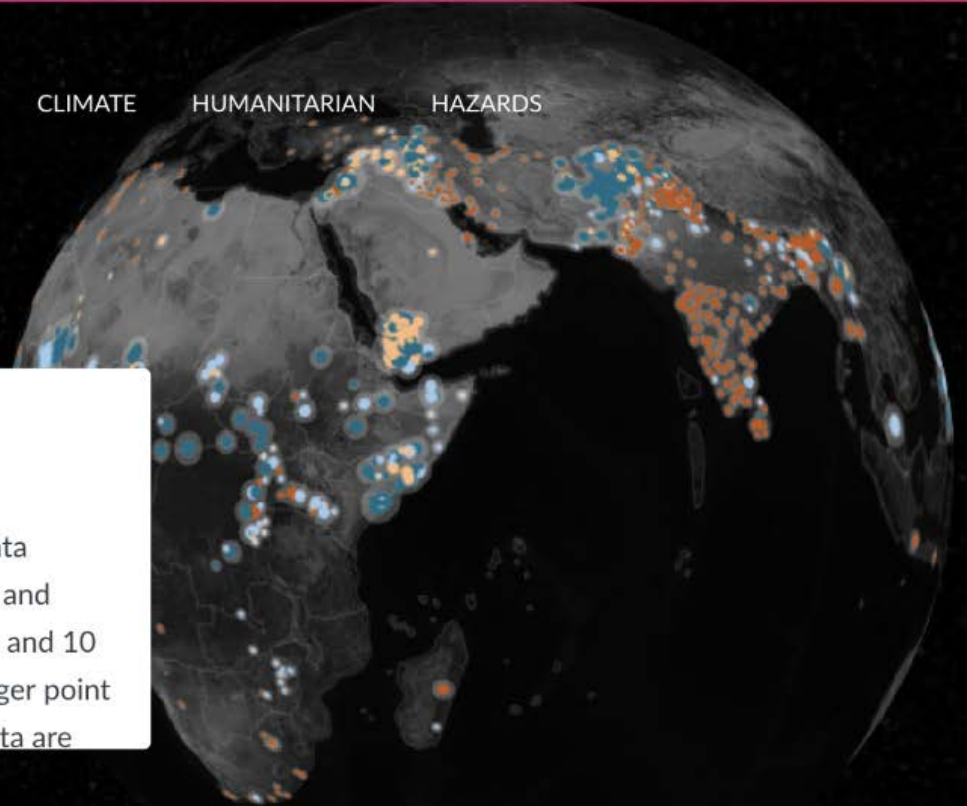
# Water, Peace & Security

[Data](#)[Topics](#)[Blog](#)[About](#)[LAND](#)[WATER](#)[AIR QUALITY](#)[CLIMATE](#)[HUMANITARIAN](#)[HAZARDS](#)

## Conflicts and protests

ACLED

The Armed Conflict Location and Event Data Project (ACLED) gathers and reports dates and locations of violence and protests in Africa and 10 countries in South and Southeast Asia. Larger point sizes indicate events with fatalities. The data are



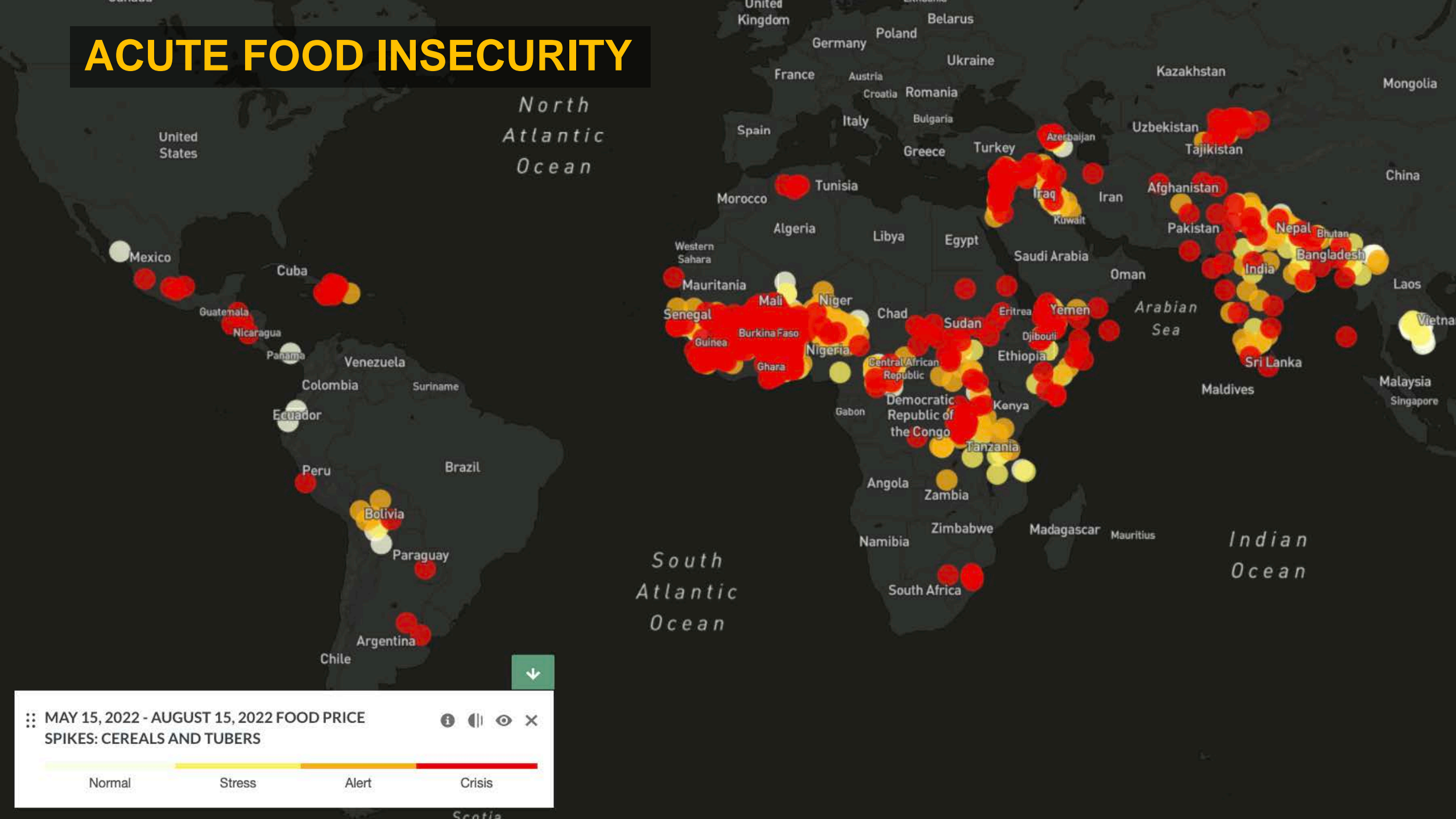


# FORCED MIGRATION





# ACUTE FOOD INSECURITY



MAY 15, 2022 - AUGUST 15, 2022 FOOD PRICE SPIKES: CEREALS AND TUBERS



Normal

Stress

Alert

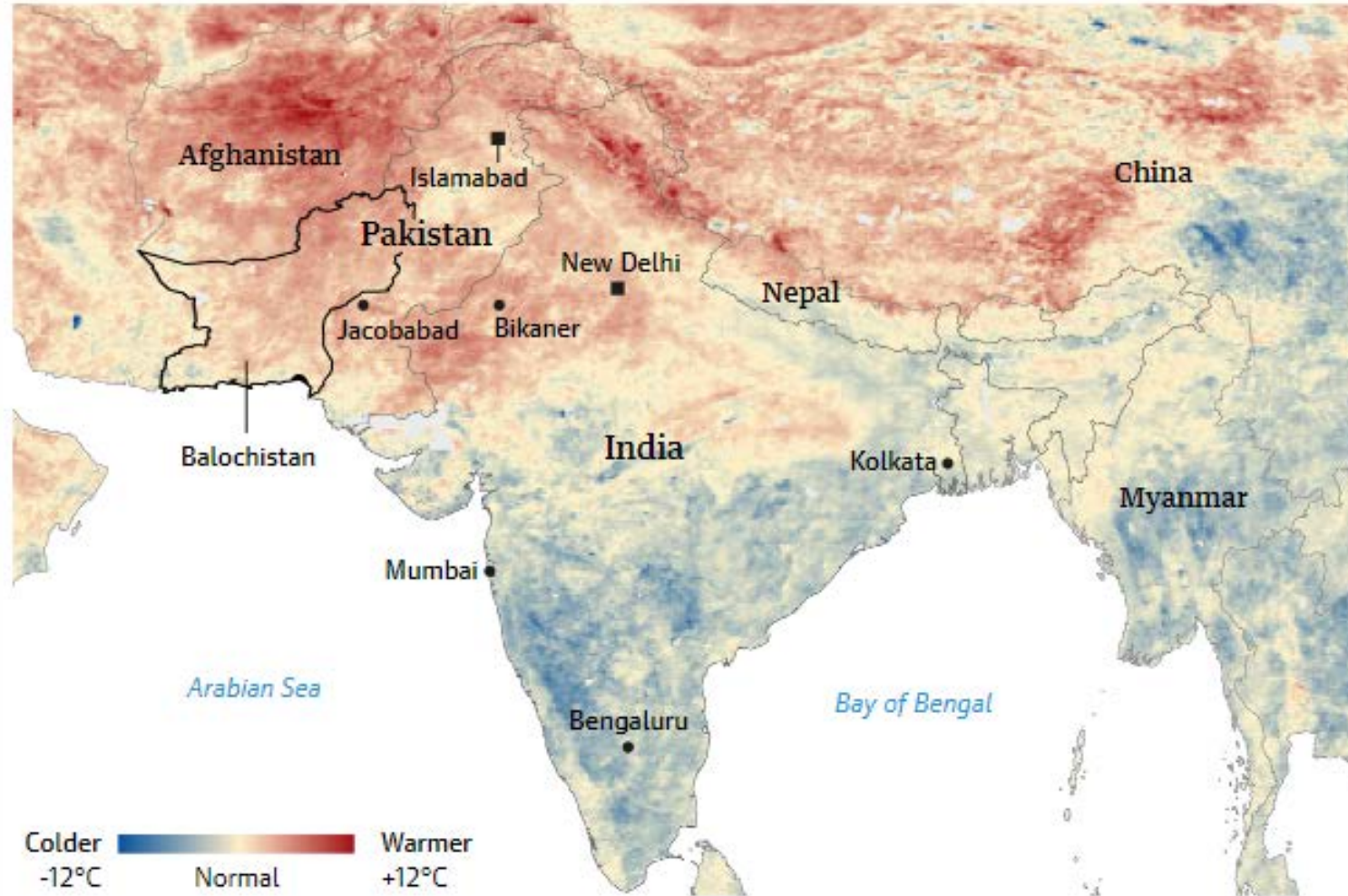
Crisis

# WATERBORNE DISEASE



# EFFECTS OF EXTREME TEMPERATURES

Land surface temperatures in April 2022 compared with averages for April between 2001 and 2010



Guardian graphic. Source: Reuters

# **KNOCK-ON EFFECTS OF WEATHER EXTREMES: WILDFIRES**



Photo: Josh Edelson/AFP – Getty Images



# **KNOCK-ON EFFECTS OF WEATHER EXTREMES: PESTS**





# INTERNATIONAL TENSIONS

- 
- A photograph showing four construction workers in the foreground, wearing yellow hard hats and orange safety vests, working with shovels on a dirt and rock construction site. In the background, a large, steep, rocky hillside is visible under a blue sky with scattered clouds. Other workers in similar gear are visible further back on the site.
- Grand Ethiopian Renaissance Dam
  - \$5 billion project
  - Africa's largest hydroelectric dam



# CHRONIC OVER-CONSUMPTION OF WATER IN RURAL AREAS

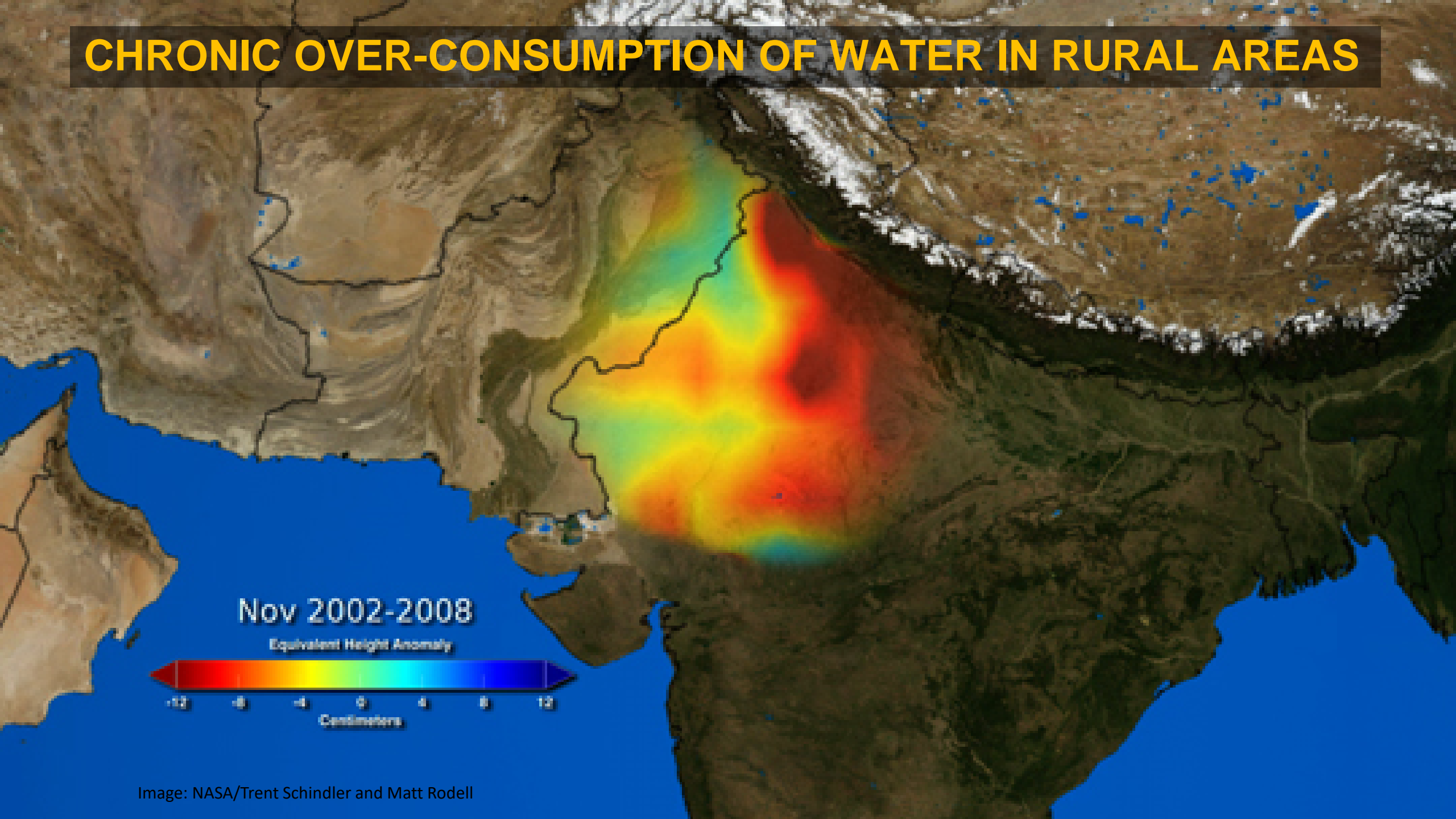


Image: NASA/Trent Schindler and Matt Rodell

# CHRONIC OVER-CONSUMPTION OF WATER IN URBAN AREAS



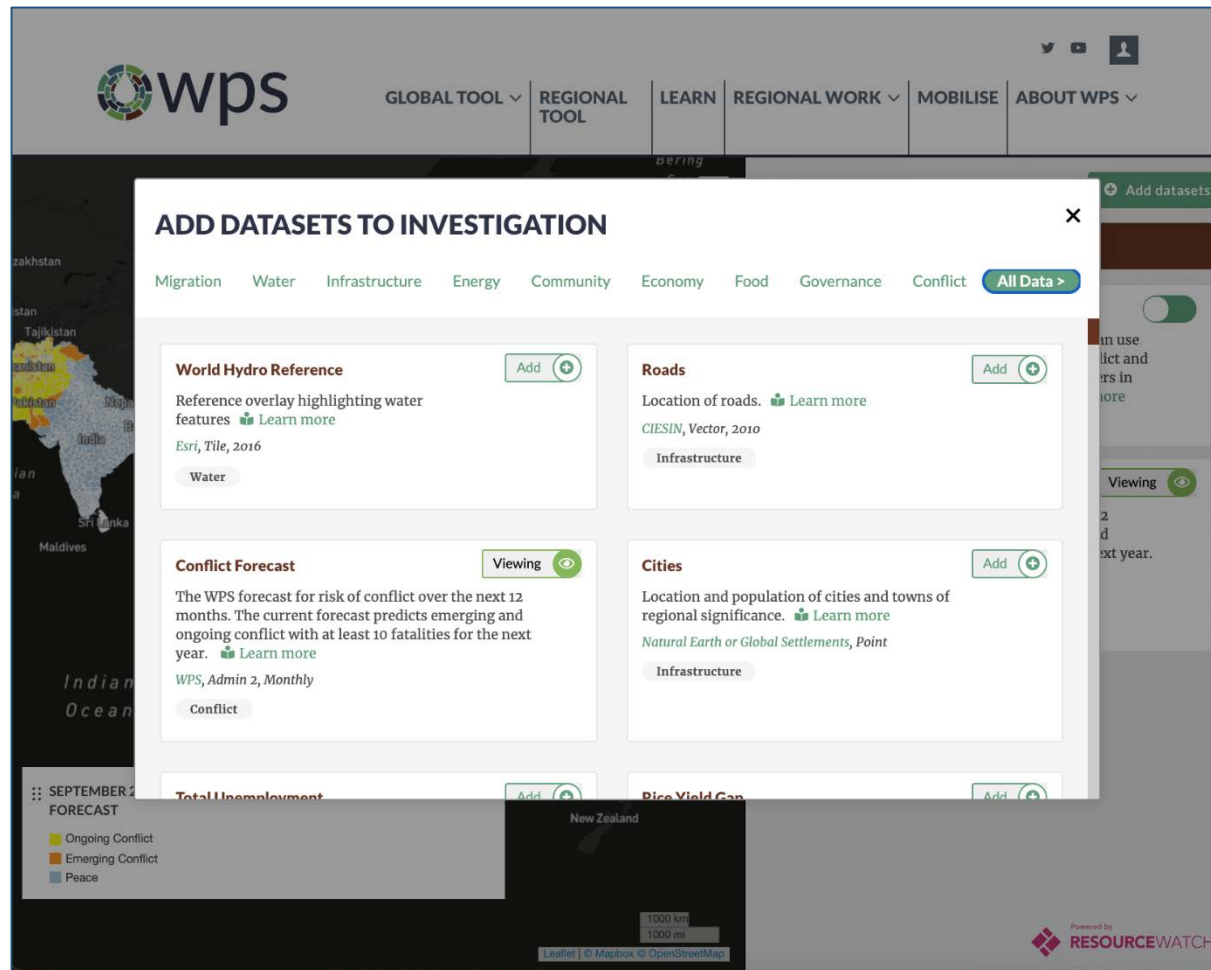
Photo: The Conversation US, Inc. How Cape Town's water crisis could make people sick. 2018.



# CATASTROPHIC FLOODING



# Reaching Key Stakeholders: Data



The tool has over 80 contextual datasets grouped by topic including migration, water, infrastructure, energy, community, economy, food, governance, and conflict that users can explore to learn more about an area of interest, view time series data and download data for further analysis.



# Reaching Key Stakeholders: Quarterly Updates

We release quarterly updates and podcasts to detail the model's prediction and to ensure the model's predictions and insights from contextual data are accessible to a non-technical audience.



GLOBAL TOOL ▾REGIONAL TOOLLEARNREGIONAL WORK ▾MOBILISEABOUT WPS ▾

October 14, 2021 | September 2021 Quarterly Update

## WPS GLOBAL EARLY WARNING TOOL SEPTEMBER 2021 QUARTERLY UPDATE

### CONFLICT OVERVIEW

Our machine learning model predicts peace or conflict over the next 12 months. It does this on the basis of 15-20 global indicators that serve as model inputs. These indicators were selected as most significant in predicting conflict from among over 200 indicators tested. We define conflict as one that produces 10 or more deaths in any given second subnational administrative unit over a 12-month period. Generally speaking, our predictions of ongoing conflict are a lot more accurate than our predictions of emerging conflict. We continue to work on improving our model and extending its geographic coverage.

The model is still predicting conflict across much of Syria and Iraq (see orange and yellow regions in the upper map); however, it is predicting more peace in this region than it did last year (see blue regions in lower map), even as the regional drought intensifies. In southeastern Turkey, the model is now mostly predicting peace instead of conflict. In Iran, the model is predicting conflict in both the southwest and the southeast, along the borders with Afghanistan and Pakistan.

In Ethiopia, the model is predicting more areas of conflict in the north, where the armed conflict in Tigray is taking place, as compared with last year. The transboundary dispute with Egypt and Sudan over the Grand Ethiopian Renaissance Dam continues without resolution (our model does not look at transboundary conflict, although we do have individual indicators, such as [relative risk for hydro-political tension of basins](#), that quantify transboundary basin risk).

The model is also predicting emerging conflict in northern Kenya, along the border with Ethiopia, as well as ongoing conflict further south. And the model is predicting ongoing conflict throughout most of South Sudan, which has continued to see large-scale flood-related displacements.

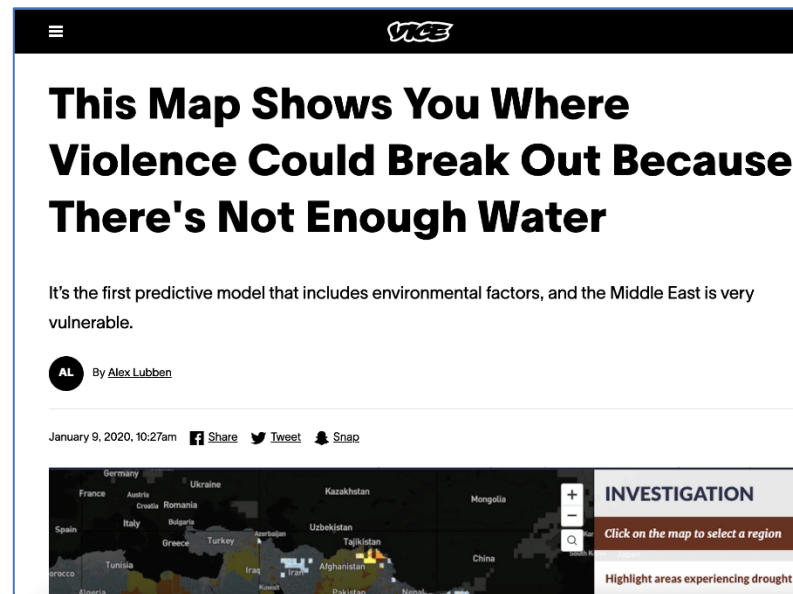
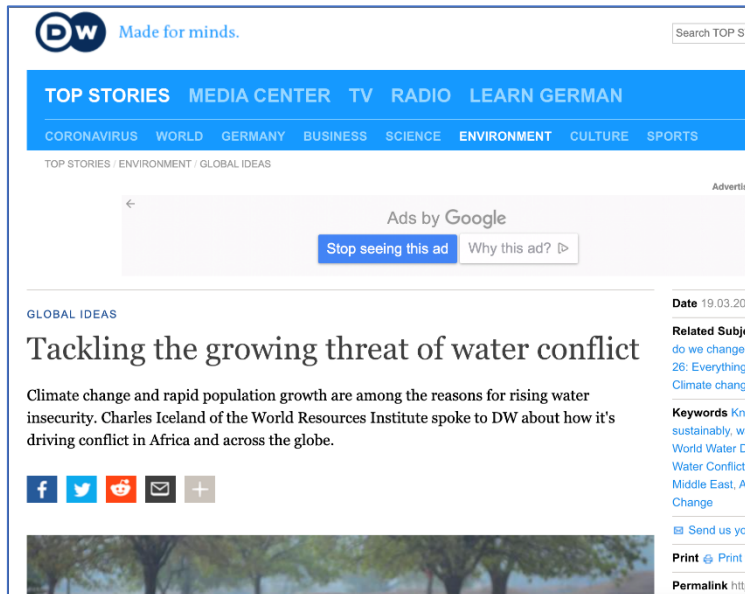
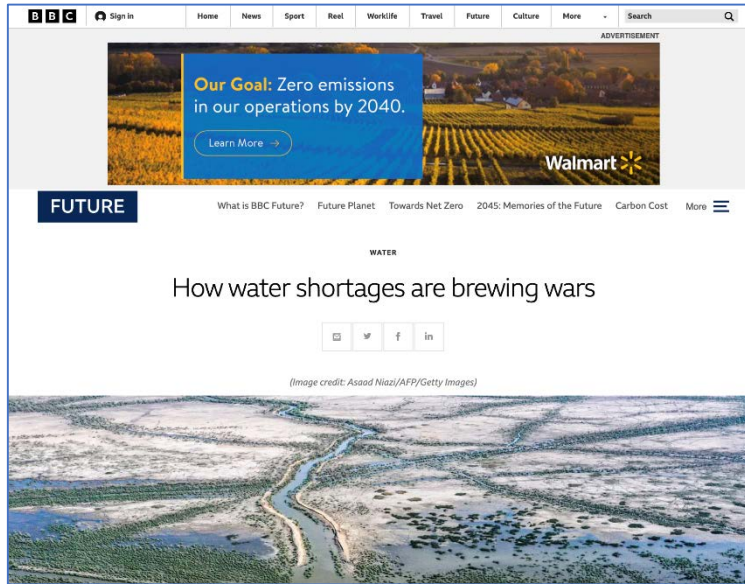
In western Sahel countries, including Mali, Niger, Burkina Faso, and Nigeria, our machine learning model is predicting emerging and ongoing conflict in many parts of the region. Compared with the last year, however, there are many places in these countries where the model is now predicting peace instead of conflict (see blue regions in lower map).

In southeastern Africa, the model is predicting ongoing conflict in the northern Cabo Delgado region of Mozambique, but it is no longer predicting conflict in central Mozambique. In regions of central and southern Madagascar, the model is now predicting peace instead of conflict, but conflict is still being predicted across much of the rest of the island, including in the drought-stricken south.

In India and countries east (except for Myanmar), the model is now predicting peace, a significant improvement from last year. It could be that COVID is reducing the number of current conflicts throughout much of the developing world, thereby influencing the model's predictions for the coming 12 months.



# Reaching the Public: Media Outreach



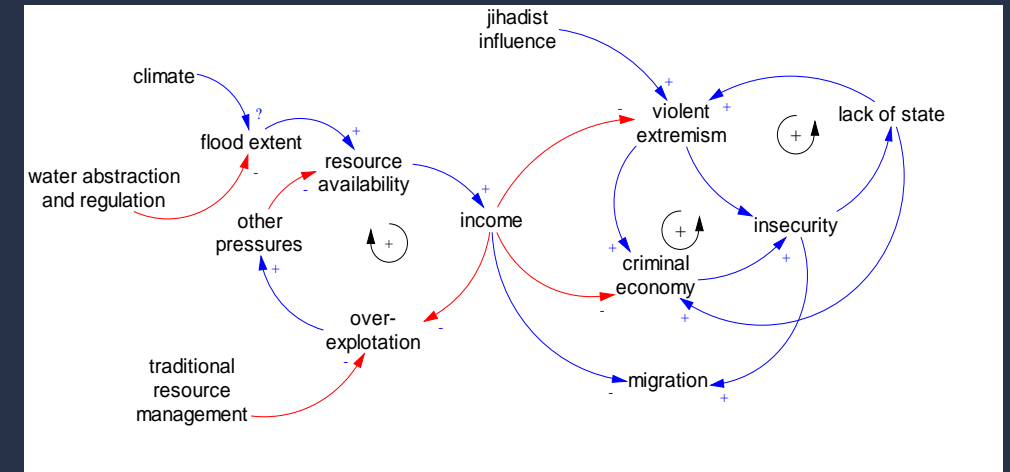
Journalists from the Guardian, BBC, Vice, and others have been reaching out to Water Peace and Security partners to tell the stories of water conflicts around the world.



# The Local Analysis Tools

## 1. Co-develop a qualitative water-security narrative

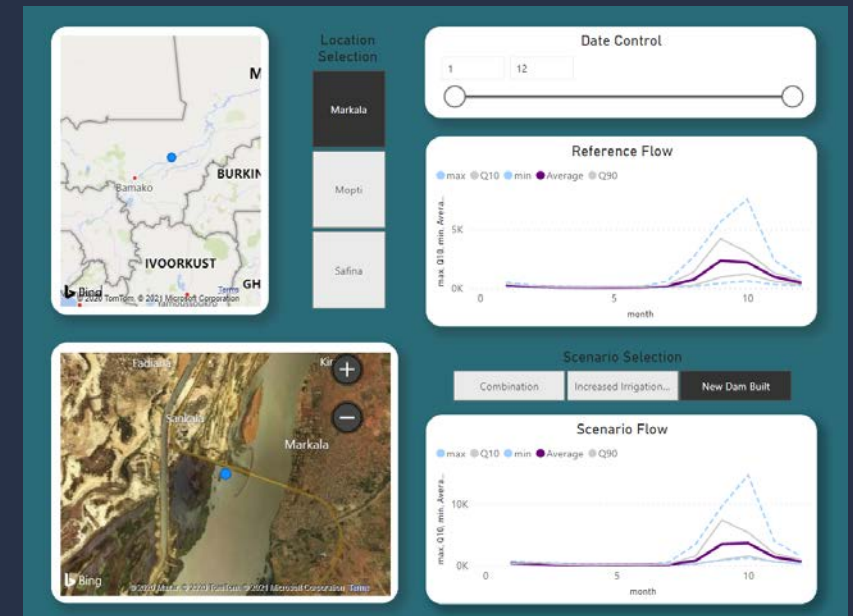
1. Understand links
2. Identify knowledge gaps and information needs
3. Decide on what requires quantification



## 2. Quantify key indicators

1. Ranges and trends
2. Water system modelling
3. Human response modelling

## 3. Customize and visualize results for different audiences



Deltares



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Open Source



Water Datasets



Water Analytics

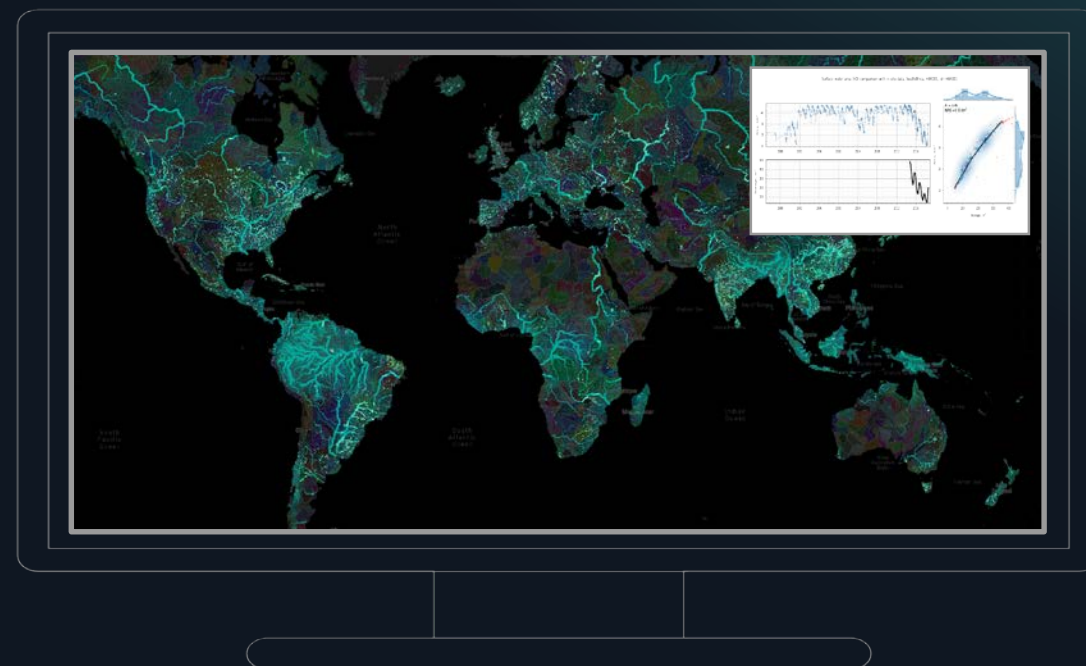


Water Stories

# PRODUCT

- Measures surface area and volume of reservoirs and rivers in NRT at 10m resolution
- Co-developing with stakeholders

## GLOBAL WATER WATCH



GLOBAL WATER WATCH







A close-up photograph of a person's hand, with fingers spread, touching a surface of extremely dry, cracked, and fissured brown soil. The cracks are deep and irregular, forming a network across the surface. The lighting is bright, casting soft shadows in the crevices.

**Water, Peace & Security**

A wide-angle photograph of a field of young green plants, possibly soybeans, growing in rows. The ground is covered in dry, cracked, reddish-brown soil, indicating a severe drought. The plants are small and green, contrasting with the parched earth. In the background, there are more rows of similar plants stretching towards the horizon. The sky is bright blue with scattered white clouds. A utility pole is visible on the right side of the horizon.

**Thank you! Questions?**

PHOTO: BOB NICHOLS | USDA