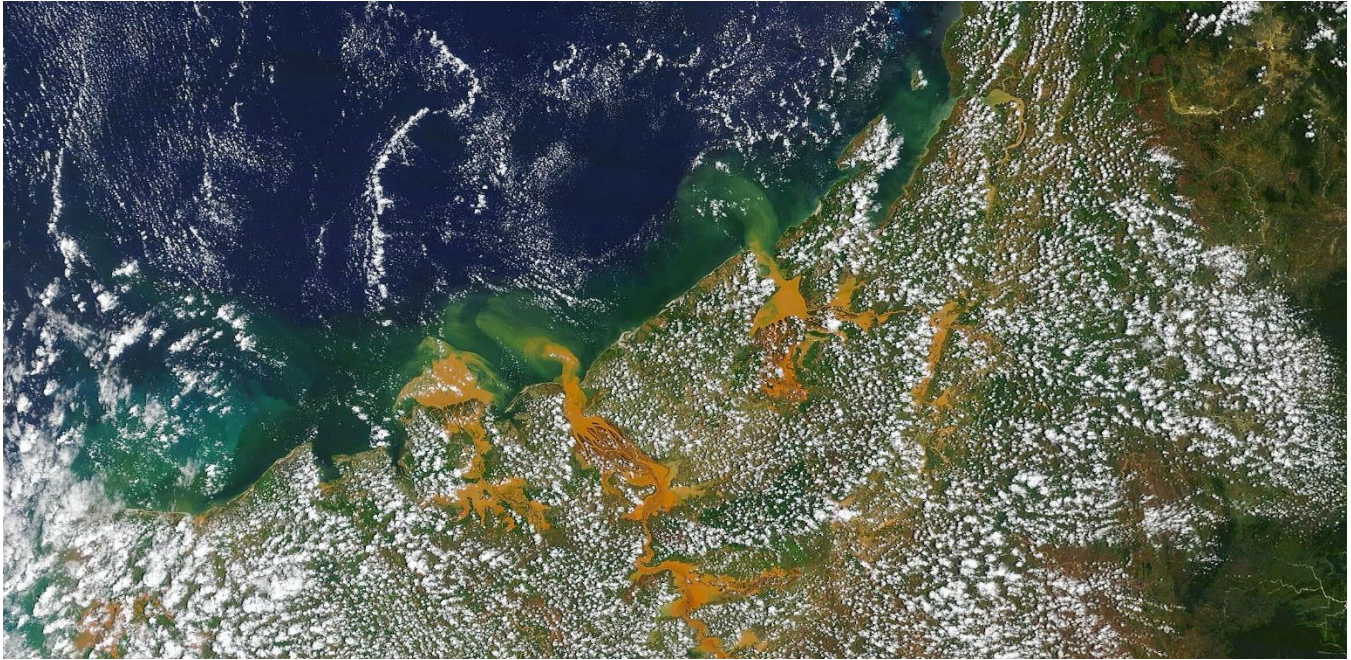


## BUREAU FOR HUMANITARIAN ASSISTANCE



# Hydrometeorological Hazards

## OVERVIEW

Hydrometeorological hazards—extreme meteorological and climate events, such as cold and heat waves, cyclones, droughts, floods, and storm surges—account for the largest number of disasters resulting from natural hazards annually and affect more people than any other type of disaster. Disasters resulting from hydrometeorological hazards cause the loss of lives, livelihoods, and services; damage to infrastructure and property; and social disruption. Hydrometeorological hazards can also exacerbate the risk and severity of other widespread threats such as epidemics, landslides, locust outbreaks, and wildfires. Floods and droughts, the two most common hydrometeorological hazards, each affected more than 1.4 billion people between 2000 and 2019 around the world, according to the UN and the Center for Research on the Epidemiology of Disasters. USAID’s Bureau for Humanitarian Assistance (USAID/BHA) supports programs to reduce the adverse effects of hydrometeorological hazards through disaster risk reduction (DRR) activities designed to strengthen early warning systems for disaster preparedness and response and risk reduction capacity at local, regional, and national levels. USAID/BHA-supported initiatives emphasize coordination with both local communities and national stakeholders to advance localized, sustainable, and environmentally sensitive measures.

USAID/BHA  
Natural Hazards and  
Technological Risks (NHTR)  
Funding in FY 2023<sup>1</sup>

**\$48,435,358**

<sup>1</sup>The NHTR sector supports capacity-strengthening activities to enhance the ability of communities to manage and respond to future risks. Hydrometeorological hazards is a USAID/BHA sub-sector of USAID/BHA’s NHTR sector. The funding amount reflects the total USAID/BHA contribution towards the NHTR sector, including \$31,789,804 for hydrometeorological hazards.

## **Supporting Cities to Prepare for Extreme Heat and Coastal Hazards**

Coastal communities are particularly at risk of hydrometeorological hazards exacerbated by climate change. For example, more than 800 million people residing across approximately 570 low-lying coastal cities could face risks of flooding from rising global sea levels and storm surge—a sea-level rise caused by a storm—by 2050, according to the UN. In addition, the frequency of heat waves is increasing globally, most acutely affecting populations in urban areas, which experience higher temperatures than surrounding rural areas. With prior year USAID/BHA funding, the International Federation of Red Cross and Red Crescent Societies (IFRC) continued to support national societies to strengthen preparedness and response capacities for extreme heat and coastal hazards across nine cities in Bangladesh, Honduras, Indonesia, and Tanzania in FY 2023. During the year, the Bangladesh Red Crescent Society and Tanzania Red Cross Society conducted multiple workshops in Bangladesh’s Bagerhat and Satkhira cities and Tanzania’s Tanga and Unguja cities, respectively, engaging with national and municipal authorities, academics, and disaster-response volunteers to assess city-wide risk to extreme climate-related hazards and strengthen collaboration on disaster preparedness and response. In Indonesia, the Indonesian Red Cross Society began conducting a heat risk assessment in Medan and Surabaya cities in coordination with national meteorological authorities to determine the potential effects of extreme heat events on the cities. Regional technical experts from IFRC’s Climate Center provided support to the national societies in all four countries with designing assessments and workshops during the year.

## **Enhancing Coastal Resilience Across the Pacific Islands and Africa**

USAID/BHA supports the World Wildlife Fund (WWF) to reduce the risks of hydrometeorological hazards for coastal communities by increasing the integration of environmental and disaster management practices into local and national policies. In FY 2023, the nongovernmental organization (NGO) provided technical support in Madagascar and the Pacific to local partners and collaborated with stakeholders, such as national disaster management agencies and other DRR actors, to bolster community resilience. During the fiscal year, WWF worked with a local NGO to install early warning systems in more than ten communities across northern and western Madagascar to improve local fishing communities’ access to weather information to prepare for natural hazards, such as cyclones, which create dangerous conditions for fishers. The Government of Madagascar’s Prevention and Emergency Management Unit appointed the USAID/BHA partner as a focal point to support the national DRR strategy by facilitating collaboration among stakeholders and promoting environmentally friendly DRR concepts.

## **Providing Reliable and Affordable Weather Observation Technology**

Reliable weather observations are critical for providing early warning services and reducing the damaging effects of hydrometeorological hazards on communities. Many countries and rural communities face challenges implementing adequate hydrometeorological warning networks due to the high costs of monitoring equipment and operational and maintenance expenses. In response, USAID/BHA, the U.S. National Oceanic and Atmospheric Administration (NOAA), the University Corporation for Atmospheric Research, and several national meteorological and hydrological services have developed a low-cost and sustainable model for 3D-printed automated weather stations (3D-PAWS) to improve the weather observation capacity in countries with limited meteorological networks. In FY 2023, USAID/BHA and NOAA installed nine 3D-PAWS across Türkiye, including in Adana, Ankara, and Konya cities. 3D-PAWS help to better communicate weather and climate information to rural communities, develop observation networks, and strengthen a country’s capacity to prepare for the effects of hydrometeorological hazards.

More information on USAID/BHA sectors can be found at [usaid.gov/humanitarian-assistance/what-we-do/humanitarian-sectors](https://www.usaid.gov/humanitarian-assistance/what-we-do/humanitarian-sectors)