



Emergency drill training at the border of Tanzania and Kenya. Photo credit: Chemonics/Light in Captivity

## Sustainable Solutions for Enhancing Health and Climate Resilience

**Climate and health are deeply interconnected, with climate change emerging as one of the most significant public health challenges of our time.**

The effects of climate change directly impact human health and challenge health systems to deliver essential services while responding to new threats, ranging from more frequent and severe weather events to shifting vector patterns. Vulnerable populations, including women, girls, people with disabilities, and those in under-resourced areas, are often disproportionately affected. However, with these new challenges also come new opportunities. Multisectoral collaboration across sectors such as health, climate, environment, agriculture, water and coastal resources management, economic development, and others has the potential to support locally led, sustainable, equitable, and contextually relevant strategies to address the complex health challenges posed by climate change.

Since our founding in 1975, Chemonics has aligned its work with the UN's 17 Sustainable Development Goals (SDGs), employing multidisciplinary responses that enhance collaboration across sectors, including partnerships with governments, donors, the private sector, and communities. We help to strengthen health systems and promote climate resilience by facilitating targeted action and driving systems change. Our efforts build resilience and safeguard health in the face of an uncertain climate future, contributing toward SDG 3 (Good Health and Well-Being), SDG 6 (Clean Water and Sanitation), SDG 13 (Climate Action), and ultimately SDG 1 (Ending Poverty).

### Facilitating Targeted Action

#### Climate-Based Early Warning Systems for Health

Climate-based early warning systems are essential for predicting health risks and preventing disease outbreaks by providing timely data on how climate variables affect disease patterns. Understanding the epidemiology and transmission patterns of vector-borne diseases like malaria that are highly susceptible to climate change is crucial for developing effective policies that address the shifting landscape of disease risk and ensure preparedness in vulnerable regions.

Under the **USAID-funded ATLAS Project**, Chemonics and partners conducted a [study](#) to assess the shifting transmission risk for malaria by geographic location and seasonality across sub-Saharan Africa based on climate model predictions extending into 2080. The study highlighted how rising temperatures could shift the geographic distribution and burden of malaria to higher elevations, identified areas with

increased nighttime temperatures, and forecasted regions likely to experience an extended warm and humid season. By pinpointing where and when health risks are rising because of climate change, health system planners can consider extending investment timeframes from seasonal to year-round, optimizing vector control, and enhancing malaria case management.

## Emergency and Disaster Preparedness

Natural disasters and severe weather events caused by a changing climate can severely disrupt vital routine care, including immunization and maternal health services, leaving populations vulnerable to preventable diseases. Similarly, resilient water systems are essential in disaster-prone regions, ensuring food security, preventing waterborne diseases like cholera and enteric and diarrheal diseases, and enhancing disaster preparedness and response.

- The **USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM)** project in [Pakistan](#) improves health services for children under age 5 and women of reproductive age in 11 flood-affected districts across the country. The project rapidly assessed and identified the need for 5,000 lady health worker kits; 90 maternal, newborn, and child health packages; and 120 birthing stations across the 11 districts, targeting an estimated 676,700 children under age 5 and 771,200 women of reproductive age. The GHSC-PSM team developed a procurement plan that facilitated coordination among USAID, Chemonics as the implementing partner, and provincial governments to obtain these health commodities. This coordination will continue to address critical needs, such as malnutrition, infant mortality, and secondary infections exacerbated by the floods. Understanding that increased flooding is a climate-related probability, the project tackles immediate health concerns. Also, it strengthens the overall resilience of the health system against future crises by strategically enhancing institutional capacity, integrating essential services, and ensuring the procurement and timely distribution of critical health commodities.

- The **Resilient Waters Project**, a five-year, \$32 million initiative that concluded in 2023, significantly improved access to safe drinking water, sanitation, and hygiene services across 66 regional, national, and local government institutions in Southern Africa — a region increasingly vulnerable to water shortages, floods, and declining crop productivity. The project implemented 82 action plans centered on water security, integrated water resources management, and water source protection, aiming to safeguard public health and the environment. By promoting safe waste management, enhancing the operation and maintenance of onsite sanitation systems, and preventing groundwater contamination, the project ensured that communities were better equipped to manage sanitation challenges. In parallel, the project strengthened decision-making capacity to respond to climate risks and a changing environment, contributing to regional resilience and the long-term well-being of vulnerable populations.

## ELEVATING EQUALITY AND INCLUSION

Partnering with Indigenous peoples, women, and local communities is essential for achieving effective, equitable, and sustainable outcomes in climate and health as part of Chemonics' commitment to locally led development and gender equality and social inclusion (GESI). The unique strengths, traditional knowledge, and leadership of these groups play a critical role in shaping solutions that are culturally appropriate and impactful, ensuring that initiatives are both inclusive and resilient. The Resilient Waters Project catalyzed GESI advancements by institutionalizing the leadership of these groups in natural resource decisions and committing budget to GESI-focused interventions. This approach resulted in near gender-parity participation (46.6%) in training and events, reflecting significant progress toward equity and inclusion.



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- The [USAID Climate Finance for Development Accelerator \(CFDA\)](#) drives investments to build resilient health systems by supporting multisectoral efforts and catalyzing \$2.5 billion in public and private climate actions by 2030. Initiatives like Southern Africa's [Adaptation Finance Window](#) address critical challenges, such as water scarcity and extreme weather, ensuring communities can adapt to climate-related health risks. The CFDA's Gender Equity Fund (CGEF) specifically focuses on women and girls, whom climate disasters often affect disproportionately. In its first year, CGEF raised over \$20 million to increase access to climate finance for gender-responsive, women-led, and women-benefiting organizations, addressing a significant gender gap in the broader climate finance ecosystem.

## Driving Systems Change

### Carbon Emissions Reduction

Achieving global climate goals requires driving systems change to reduce carbon emissions, and health systems, with their substantial resource consumption and broad influence, can lead this effort.

- The GHSC-PSM **Carbon Emissions Reduction Initiative**, launched in 2022, is another connection between climate action and health.

By reducing health supply chain emissions, the project mitigates climate change and protects public health from the adverse effects of a warming planet. The initiative achieved significant emissions reductions in fiscal year (FY) 2023, demonstrating the health sector's capacity to drive meaningful environmental impact. For example, by optimizing shipping via sea, the initiative reduced emissions by 46.6 metric tons of CO<sub>2</sub>, representing an 85% average reduction rate from the third quarter of FY 2019 to the fourth quarter of FY 2023. These efforts highlight the direct link between sustainable practices within health systems and the broader goal of safeguarding environmental and public health.

### Strengthening Governance for One Health Approaches

The One Health approach integrates human, animal, and environmental health to comprehensively address emerging and re-emerging diseases that cross species barriers and require action from ministries of health, agriculture, environment, and others.

- As part of the [USAID-funded Human Resources for Health in 2030 \(HRH2030\) Program](#), Chemonics deployed various simulation exercises in Ethiopia, Tanzania, and Cameroon to strengthen the One Health approach. These pilot case studies on emergency preparedness and management revealed key insights into effective response strategies. A [complex, three-day exercise at the Kenya-Tanzania border](#) highlighted critical gaps in decontamination procedures, sample management, and inventory control, identifying a need for better coordination among sectors and leading to the development of an action plan to address these weaknesses and enhance emergency preparedness. The exercise's findings have informed national policies and guidelines, enhancing preparedness and response frameworks to better address health threats across interconnected systems.

### About Chemonics:

Founded in 1975, Chemonics is an international development consulting firm. In more than 100 countries around the globe, our network of approximately 6,000 specialists shares a simple belief: that the challenges we face today are best solved through the right partnerships — sharing knowledge, expertise, and experience to deliver results. Where Chemonics works, development works.

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