

# Strengthening Health through Integrated Environmental and cLimate Data (SHIELD)

*Project overview*

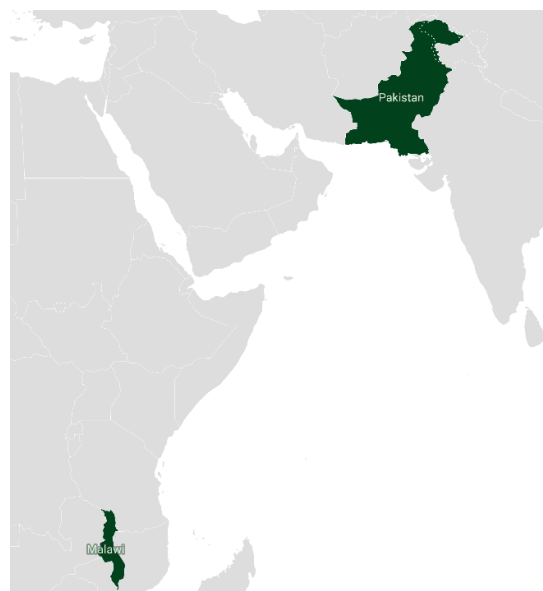


Women and girls walk in the inundated region of Geokaloi village in the Southern Pakistani province of Sindh. Between June and October 2022, devastating floods occurred in this region. © UNICEF/UNI431676/Sokhin

## Overview

Climate change is intensifying hazards such as floods and heatwaves, increasing the burden of climate-sensitive diseases and the risk of public health emergencies. While climate, health, and environmental data exist in many countries, they are often fragmented across institutions, limiting their usefulness for preparedness and timely response.

SHIELD is a research project funded by the Wellcome Trust (2026-2028) to strengthen national capacity for climate and health decision-making in Malawi and Pakistan. We achieve this goal by co-designing and supporting ministry-hosted climate and health data services that integrate climate, health, environmental, demographic, and socioeconomic data, which enables timely, relevant, and actionable insights for public health decision-making. We work in close collaboration with local stakeholders to ensure alignment with country priorities, sustainability, and long-term ownership



PATH is a global nonprofit dedicated to achieving health equity. With more than 40 years of experience forging multisector partnerships, and with expertise in science, economics, technology, advocacy, and dozens of other specialties, PATH develops and scales up innovative solutions to the world's most pressing health challenges.

**Address**  
437 N 34th Street  
Seattle, WA 98103 USA

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<https://www.path.org/who-we-are/programs/digital-health/strengthening-health-through-integrated-environmental-and-climate-data-shield-project/>

## What SHIELD delivers

SHIELD's outputs aim at cultivating sustained climate and health evidence generation pipeline:

- **Integrated climate and health data services**, including a functional initial system capability and a clear pathway for scale-up.
- **Priority use cases** in each country that demonstrate how integrated climate and health data services can inform real-world public health decisions.
- **Capacity building and strengthening** to support effective adoption, use, and maintenance.

Together, these outputs set the stage for future investment:

- A **costed roadmap** for continued development and scale.
- A **credible investment case** for multilateral development banks (MDBs) and other funders.

## SHIELD's design principles

- **Integrating climate and health data across disciplines.** SHIELD addresses fragmented data landscapes by supporting interoperable services that align climate, health, environmental, and related datasets within real-world constraints.
- **Separating data from analytics to preserve downstream flexibility.** By maintaining clear boundaries between data, analytics, and interpretation, SHIELD supports transparency, scientific rigor, and flexibility as priorities and methods evolve.
- **Designing around user needs and decision workflows.** A human-centered design approach ensures that services reflect the realities of users, increasing usability and uptake.
- **Building capacity alongside digital infrastructure.** Service development is paired with targeted capacity building and strengthening to support sustained use.
- **Embedding government ownership for long-term sustainability.** SHIELD works with local stakeholders from the outset to integrate services within existing ecosystems and financing pathways.



Health workers clean and restore part of a health facility in Phalombe District damaged by Tropical Cyclone Freddy. The cyclone struck Malawi on 12 March 2023, bringing torrential rains, strong winds, and severe flooding, particularly across the Southern Region. On 13 March, the President declared a State of National Disaster after 11 of Malawi's 29 districts were affected. © WHO / Moving Minds



Months after record monsoon flooding in Sindh Province, Pakistan, stagnant water continues to surround rural villages. Climate change has intensified extreme rainfall, compounding long-standing challenges related to safe water, nutrition, and household livelihoods in flood-affected communities. © UNICEF/UN0847811/Haro

## How the work is organized

Over three years, the SHIELD consortium focuses on three interconnected work packages:

### 1. Co-design and implement integrated data services

This work package maps existing climate and health data systems, identifies gaps, and contributes to a shared national vision for integrated data services. Country teams jointly develop enterprise architecture and governance models and prioritize use cases. Local firms build and iteratively refine initial platform versions, supported by applied research to demonstrate decision-making value.

### 2. Strengthen leadership, coordination, and local innovation

SHIELD is engaging with cross-sectoral technical working groups to ensure robust climate and health evidence and policy ecosystem oversight. In parallel, SHIELD is delivering climate and health capacity building and strengthening (including leadership programmes) across government and partner institutions, supporting coordinated and effective data service use.

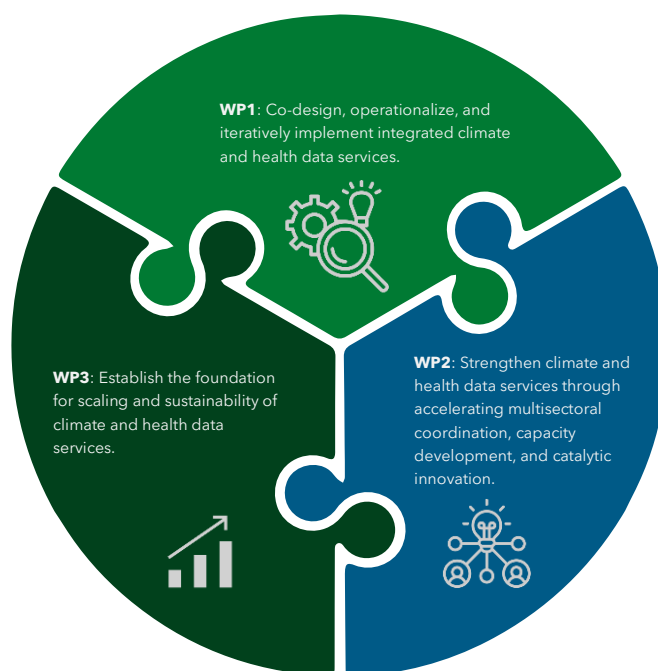
### 3. Plan for sustainability and scale

This work package focuses on institutionalization and long-term financing. SHIELD develops roadmaps to embed services within national systems and supports governments to pursue future funding through multilateral donors and climate-finance mechanisms.

## Partners

SHIELD is implemented by a consortium of institutions:

- **Global partners:** PATH; Stockholm Environment Institute Africa
- **Pakistan:** Aga Khan University
- **Malawi:** Malawi University of Business and Applied Sciences
- **Collaborators:** World Health Organization–World Meteorological Organization Joint Office



#### For project engagement:

Pakistan – Dr. Saira Nawaz (snawaz@path.org) | Malawi – Joseph Mtenje (jmtenje@path.org) | Global – Prof. Bilal Mateen (bmateen@path.org)