

PRIMARY HEALTHCARE ON THE CLIMATE FRONTLINE:

the UK's role in protecting children from infectious diseases

UNITED KINGDOM

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for every child



A health worker administers a vaccine dose to 20-month-old Fandresena during a mobile clinic session in the Tsiandrara village, Boeny, Madagascar. In 2026, Cyclone Fytia caused loss of life and displacement across Madagascar, with Boeny being the most affected.

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Contents

Acronyms	3
Executive Summary	4
SECTION 1: Introduction	5
SECTION 2: Case studies of climate resilient PHC	12
SECTION 3: The UK's strategy for climate and health	22
SECTION 4: Policy recommendations	25
Annex 1: Key definitions	27
Annex 2: Overview of principal UK investments in climate and health	28
References	31

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Acronyms

ADB	Asian Development Bank	IDRC	International Development Research Centre
ARCH	Advancing Research for Climate & Health	IPCC	Intergovernmental Panel on Climate Change
ATACH	Alliance for Transformative Action on Climate and Health	KP	Khyber Pakhtunkhwa
CHAP	Climate Health Adaptation Plan	LMICs	Low- and middle-income countries
CHIRP	Climate & Health Research Programme	MNCH	Maternal, newborn and child health
CoEs	Communities of Expertise	NAPHS	National Action Plan for Health Security
COP	Conference of the Parties	ODA	Official Development Assistance
CRSHS	Climate Resilient and Sustainable Health Systems	PHC	Primary healthcare
CRVA	Climate and Health Vulnerability and Adaptation Assessment	RMNCAH-N	Reproductive, maternal, newborn, child and adolescent health and nutrition
CSID	Climate Sensitive Infectious Diseases	SDGs	Sustainable Development Goals
EPD	Ending Preventable Deaths	SRHR	Sexual reproductive health and rights
FCDO	Foreign, Commonwealth and Development Office	TA	Technical Assistance
GBV	Gender-based violence	TDDAP2	Tackling Deadly Diseases in Africa Programme 2
GCF	Green Climate Fund	UNFPA	United Nations Population Fund
GFF	Global Financing Facility	UNICEF	United Nations Children's Fund
GHGs	Greenhouse gases	WASH	Water, Sanitation and Hygiene
GHIs	Global health institutions	WB	World Bank
GNI	Gross National Income	WHO	World Health Organization
HSTRF	Health Systems Transformation and Resilience Fund	WISER	Weather and Climate Information Services
ICF	International Climate Finance		
IDA	International Development Association		

Executive Summary

Climate change is undermining child survival. Almost every child on earth is exposed to at least one climate hazard, such as flooding, drought or heatwaves. 1.1 billion children are exposed to three or more overlapping climate hazards.

Children are uniquely vulnerable to climate shocks and environmental hazards, with those living in low-income, fragile and climate-vulnerable settings facing the greatest exposure and the weakest access to essential services. As climate impacts create new health conditions and exacerbate existing ones, climate-resilient primary healthcare has become an indispensable frontline response for protecting children and sustaining hard-won progress on survival and wellbeing.

Recent reductions in UK Official Development Assistance (ODA) are hitting vital systems for children at precisely the moment when climate and health pressures are growing, undermining decades of UK investment in child survival. With fewer resources, it is even more important to ensure that the UK's investments are intentionally focused on children, as the most vulnerable to escalating climate risks and, therefore, the most reliant upon system resilience.

This report sets out the case for sustained, child-focused UK investment and leadership on climate, health and primary healthcare. It brings together evidence on the links between climate change, infectious disease and child survival; it outlines why climate-resilient primary healthcare is critical and cost-effective; and draws lessons from five country examples to identify where UK funding, diplomacy and technical expertise can add greatest value and realise a modern partnerships approach.

This report calls on the UK Government to:

- **Recommendation 1** - Embed the needs of children, as the most climate-vulnerable population, at the heart of UK investments and strategies for international development, including global health and international climate finance.
- **Recommendation 2** - Leverage UK funding and influence to drive coordinated global action on climate and health.
- **Recommendation 3** - Maintain and strengthen UK expertise and partnerships for climate-resilient primary healthcare (PHC) through the Foreign, Commonwealth & Development Office's (FCDO's) new Communities of Expertise.
- **Recommendation 4** - Invest in action-oriented research and evidence that supports increased investment, better PHC level decision-making, and scaling up of interventions that work to protect child health in a changing climate

Section 1: Introduction

1.1 The Impact of Climate Change on Child Survival

Climate change is threatening children's survival and wellbeing even before they are born, and the evidence is building on the breadth of dangers it poses.

Incredible progress has been made for global maternal, newborn and child health (MNCH) over the last few decades, to which the UK has made a significant contribution through ODA investment, but data shows that this progress is slowing.¹ For the first time this century, child mortality is expected to rise.² The growing risks arising from a changing climate could further stall and even reverse the advances that have allowed more babies to be born healthy and more children to survive to the age of five today than ever before.

Almost every child on earth is exposed to at least one climate hazard, such as flooding, droughts and heatwaves.

1.1 billion children are exposed to three or more overlapping hazards.³ These compounding threats cascade, overwhelming social services' capacity and undermining the resilience of families and communities. Children are uniquely vulnerable to climate and environmental shocks due to their physiology, behaviours and dependence on caregivers; all of which increase their risk of harm.⁴

Climate hazards are impacting leading causes of under-five mortality such as neonatal conditions and infectious diseases. More frequent exposure to higher temperatures during pregnancy, and for longer periods of time, substantially increases the odds of premature deaths and preterm birth.⁵ It is also associated with pre-eclampsia, gestational diabetes, hypertensive disorders, heart attacks and strokes among pregnant women, with implications for both mothers and babies.⁶



Ward of the Gampaha District General Hospital, in Sri Lanka, waterlogged by floodwaters caused by Cyclone Ditvah. Essential medical services were disrupted as the facility struggled to operate. © UNICEF/InceptChange

Climate-related environmental changes also multiply the risk factors for diseases – for example, more frequent wildfires and dust storms worsen air quality⁷ and with more intense storms, water may carry contaminants across longer distances.

Finally, children also endure unequal chances of survival based on geographical, socio-economic, and other disparities. These inequities affect children's access to health services and the quality of care they receive. Extreme weather events such as floods and storms disrupt health services through infrastructure damage and road closures, making access even more difficult for remote and underserved areas. In this and many other ways, climate change intertwines with existing vulnerabilities to place children at greater risk of death and disease, and adverse lifelong outcomes than ever before.⁸

However, not all the ways that climate change harms child health are fully understood.

Robust estimates of current or future child mortality and morbidity are still lacking.⁹ Evidence is emerging but gaps remain in capturing and predicting the impact of climate change on water- and vector-borne diseases, some of which are leading causes of preventable deaths of children under five.

Increased attention to the links between climate and infectious disease transmission is critical to child survival, especially those in the most deprived regions of the world. This need was recognised by the UK's Climate Change Committee, which identified climate-sensitive infectious disease as a priority gap to be addressed to better understand risk and adaptation needs of the UK;¹⁰ a finding that is reflected across diverse contexts globally.

1.2 The Impact of Climate on Infectious Diseases

Infectious diseases, such as malaria and diarrhoea, remain leading causes of death for children under five, particularly for children in low- and middle-income countries and fragile and conflict-affected settings. In Sub-Saharan Africa, malaria is the largest cause of death for children under five.¹¹ Diarrhoeal diseases account for 8% of under-five mortality worldwide, the burden of which is concentrated in low- and middle-income countries (92%).

Warmer climates are expanding the areas where disease-carrying vectors (like mosquitoes) can survive¹² and multiply, although a few areas are also becoming too hot for some species.

Increased temperatures are also extending disease transmission periods, with vector behaviours changing – for example, mosquito feeding during early evening or morning, reducing the effectiveness of barriers such as bed nets.¹³ Higher rainfall, floods and drought can increase the amount of standing water, creating more areas for vectors to breed.

An additional 4.7 billion people may be at risk of vector-borne diseases like malaria and dengue by 2070.¹⁴ As vectors that carry disease begin to thrive in new regions, their expansion into previously unaffected areas presents new public health challenges as communities and health systems may not be equipped to handle these diseases, potentially leading to increased morbidity and mortality rates, particularly amongst children.¹⁵

Increased rainfall, floods and drought can also increase the risk of contaminated water leading to water-borne diseases like cholera. High rainfall and flooding can amplify contamination pathways by

overwhelming sanitation systems, while high temperatures and droughts can increase the concentration of pathogens in water and force communities to rely on unsafe water sources.¹⁶

New research suggests that the increased risk of some infectious disease transmission from climate change may stem far more from the disruptive impacts of extreme weather events than from changes to ecology.¹⁷ Extreme weather events like flooding or cyclones, are damaging homes and infrastructure, disrupting access to healthcare and other essential services, highlighting the need for protective housing and home-based disease control interventions, like bed nets.

Other factors linked to climate change, like migration, urbanisation and deforestation, can also play a role in the spread of infectious diseases. In Brazil, deforestation has been linked to rising malaria cases, through the creation of warm puddles around debris where water is no longer being taken up by trees.¹⁸

Although the drivers are complex and overlapping, the overall trend is clear: climate-affected settings are seeing more outbreaks and rising infectious disease burdens.

Early predictive modelling suggests that, without urgent action, climate change will cause hundred thousands of additional deaths annually by infectious disease, with children bearing the greatest burden.

Boxes 1-3 describe the trends of three major climate-sensitive infectious diseases – malaria, dengue and cholera – which are also among the leading causes of child mortality.

This has implications not only for child survival but for global health security. Neither climate change nor infectious disease respect borders, reinforcing the need for coordinated global action. The momentum on this is however growing – the first global action plan on climate and health was agreed at the World Health Assembly in 2025 and, at COP30 later that year, the Belém Health Action Plan was launched with 30 countries already endorsing it, including the UK.¹⁹ A central pillar of this plan is the emphasis on the powerful co-benefits that can be achieved through coordinated action on climate and health.

WHO's analysis of 59 National Adaptation Plans found that all (100%) identified climate-sensitive health risks, underlining the scale and diversity of the threats countries face.²⁰ Vector-borne diseases (93%, 55) were the most frequently mentioned, followed by waterborne diseases and other water-related health impacts (90%, 53); 66% mentioned malaria, 51% mentioned dengue and 58% mentioned diarrhoeal diseases.

Yet fewer than half included actions to address vector or waterborne diseases, revealing a major gap between recognition of risk and concrete response. 3 in 4 mentioned children as the most-at-risk group (45), pointing to a further gap in translating recognition of vulnerability into action for those most at risk.

Box 1: Malaria

Today, globally, 1 billion children are exposed to malaria.²¹ After decades of progress, malaria cases are rising, particularly in Africa which accounts for 95% of global cases and deaths.²² Children under the age of five account for 76% of all malaria deaths in the region. While increases are multifactorial, several countries like Mozambique are experiencing outbreaks following extreme weather events which have disrupted health systems and delivery of interventions. In Asia too, extreme weather events have undermined progress for malaria eradication. In 2022, Pakistan experienced its worst malaria outbreak in 50 years following mass flooding. Large pools of stagnant water and disrupted health systems created a 'perfect storm' for the spread of malaria, with cases surging from 400,000 in 2021 to more than 1.6 million in 2022.²³

A 2026 Nature study estimated that climate change could lead to more than 100 million additional malaria cases and 500,000 additional deaths in Africa by 2050.²⁴ Warmer temperatures have facilitated malaria transmission into the highlands of countries like Ethiopia and Kenya where previously it was too cold for mosquitoes.²⁵ The study also suggests additional cases will stem mostly from intensification in existing endemic areas rather than range expansion. Extreme weather events are predicted to be the primary driver of risk, accounting for 79% of the increased malaria transmission and 93% of additional deaths from the disease.

Box 2: Dengue

The geographic distribution of dengue has rapidly expanded since the 1990s. While this can be largely attributed to human movement, one of the dominant causes of expansion over the coming years to 2030 is predicted to be climate change.²⁶ Warmer, wetter conditions have extended transmission seasons and pushed dengue transmission into new regions in Southeast and South Asia, and Sub-Saharan Africa.^{27, 28} One study estimates that roughly 18% of dengue cases are already attributable to past climate change, and future warming is projected to drive a further 49–76% increase in incidence, depending on different scenarios of greenhouse gas emissions, with scenarios with limited action to reduce emissions resulting in higher dengue burdens.²⁹

Because dengue is rapidly expanding into new geographic areas, global reporting remains incomplete and primary health workers often misdiagnose cases, particularly where clinicians are unfamiliar with distinguishing dengue from malaria in newly affected transmission zones.³⁰

Box 3: Cholera

Since 2021, there has been a global upsurge in cholera. Sixty countries reported cases in 2024, an increase from 45 in 2023, with the burden of the disease concentrated in Africa, the Middle East, and Asia. Children under five are particularly vulnerable to cholera because they dehydrate quickly and are disproportionately affected by malnutrition, which sharply increases the risk of severe disease and death.

Climate change, together with factors like poverty and conflict, is driving this upsurge. Extreme weather events such as floods and droughts are reducing access to clean water and creating ideal conditions for cholera to thrive. Prolonged and extreme drought in Kenya in 2022 led to more than 7,800 cholera cases and 122 deaths by March 2023.³¹

1.3 The Role of Climate Resilient Primary Healthcare



Mustaf Mohamed stands ready to deliver essential nutrition and PHC services amid increasing caseloads driven by drought-induced displacement. ©UNICEF/Yasin

While evidence gaps remain, many of the solutions that are required to protect children's health in a changing climate are well known. Understanding the role of climate change as a multiplier of health vulnerabilities, the Intergovernmental Panel on Climate Change (IPCC) found that the most effective measures to reduce vulnerability in the near term are programmes that implement and improve basic public health³² – including programmes related to climate-sensitive diseases; increasing health systems resilience; improving access to potable water; improving surveillance and early warning systems; and vaccine development.³³

Critical to the delivery of these interventions is primary healthcare. Primary healthcare or 'PHC' refers to an approach to health system strengthening which calls for, and enables, universal access to health care and services for everyone.³⁴ It achieves this by:³⁵

- 1 Integrating services** which bring together primary care or individual level health interventions (such as, check-ups during pregnancy, childhood immunisation or treatment for common illnesses) with public health functions (such as, health promotion, disease surveillance and response and emergency preparedness);
- 2 Multisectoral policy and action** which recognise the important roles of sectors beyond health in creating and damaging health, and the need for coordinated action across these sectors to achieve health goals and reduce health threats;
- 3 Empowering people and communities**, as advocates for their own health, as co-developers and deliverers of health services, and as self-carers and caregivers.

PHC is about shaping health systems to be resilient, efficient and responsive to the needs of people and communities. As such, PHC interventions have a central role in addressing the impacts of climate change on child health:

- **PHC workers are key first responders to the impacts of extreme weather events,** delivering efficient local response to the needs of their communities. PHC facilities are a vital component of disaster response infrastructure, maintaining essential services and supplies during emergencies.³⁶ However, PHC facilities and their staff are also vulnerable to extreme weather events, impacting on access and quality of care precisely when most needed.

In Cox's Bazar refugee camp in Bangladesh (**case study 3**) UNICEF ensures safe transport for health workers to primary healthcare facilities during and after extreme weather events, ensuring staff safety and vital staff coverage.

- **PHC can also play a critical role in anticipatory action.** As often the first point of contact, particularly for mothers, babies and children, PHC can support emergency preparedness and response such as early surveillance and climate-informed early warning systems (EWS). An emerging approach, Emergency Ready Primary Healthcare, seeks to ensure PHC systems can rapidly identify threats, safeguard patients and health workers and maintain continuity of services during increasingly frequent overlapping health emergencies.³⁷

In South Sudan (**case study 2**) MSF and partners have developed malaria forecasts informed by climate and weather data to provide early warning of the likely timing and burden of seasonal disease outbreaks, enabling early response at PHC level.

- **PHC is designed to reach remote, climate affected populations** through active community engagement and multisectoral action to address wider determinants of health in a changing climate. This is critical for climate resilience because it is those already underserved and vulnerable populations, like children, who are most affected by the impacts of climate change.

In Ethiopia (**case study 4**) Mobile Health and Nutrition Teams provide essential maternal and child health services to remote climate affected communities.

- **Climate-resilient PHC is cost-effective.** New research by the Rockefeller Foundation finds that £1 investment in climate health services could generate up to £68 in returns. Even the worst-case scenario of high investment cost and lowest projected impact would still deliver returns 3 times the cost of investment.³⁸ On the contrary, without intervention, disruptions to health systems from climate-related disasters in low- and middle-income countries could drive £16 trillion in economic losses by 2050.³⁹

In Cox's Bazar refugee camp in Bangladesh (**case study 3**) monthly savings of £1,002 were generated through solarisation of health facility energy systems.

- **PHC can play a powerful role in climate mitigation as well as adaptation.**⁴⁰ Whilst healthcare's climate footprint is largely driven by high income countries,⁴¹ simple low-carbon solutions like solar-powered PHC facilities and efficient waste management not only cut emissions but also keep services running during extreme weather events. Evidence shows that many PHC-level climate actions can deliver "multiple wins": they reduce emissions, strengthen resilience, and further protect health.

In Nigeria (**case study 1**) and in Lao PDR (**case study 5**) upgrades to primary healthcare facility infrastructure support both health system resilience as well as emissions reduction.

SPOTLIGHT STORY: Mobile brigades bring vaccines to climate-impacted regions of Mozambique



Clockwise: Oscar, Jonito with Luzinha and Elazia with Samuel. © UNICEF/Franco

In Mozambique, 'mobile brigades' - teams of health workers that move between communities- provide access to PHC in the most remote areas. They offer services that include maternal and child health consultations, immunisation and referral for treatment of climate-sensitive infectious diseases like malaria.

As a member of a mobile brigade in Zambézia province, Oscar Emilio works on preventive medicine, vaccinating children who live far from hospitals and clinics. Luzinha, aged 5, and Samuel, aged 3, (pictured) are among the dozens of children in the Muebe community who rely on monthly visits from Oscar's brigade.

This region of lush low-lying farmland often floods in the rainy season. From Muebe, Oscar says, "it is a 15 kilometre walk to the nearest healthcare centre for these women. With babies on their backs, in the heat, on bad roads, it takes six hours to walk there and back."

To reach the community, Oscar rides a motorbike through an arduous route sometimes blocked by water. To cross flooded sections, he must put his motorbike in a canoe.

As rainfall becomes more unpredictable and shocks intensify, these mobile brigades are crucial. Mozambique has one of the highest numbers of children living in areas threatened by tropical storms, which cause significant damage through high winds, heavy rainfall and storm surges. Four in five children are exposed to multiple and intense climate hazards. In worsening conditions, Oscar and his colleagues are having a significant impact and preventing childhoods from being cut short by climate change. He says, "Now 100% of the children in this community are getting vaccines on time."

Section 2: Case studies

The case studies that follow distill practical lessons from diverse country and implementing partner experiences to show how climate-resilient, child-centred PHC systems can drive action on climate-sensitive diseases.

1. Creating a strong enabling environment for climate resilient PHC in Nigeria

Children in Nigeria are exposed to multiple climate hazards, including droughts, extreme heat, flooding and more frequent heatwaves.⁴³ Four in every five children in the country are exposed to three or more climate hazards; 90% live in areas where the effects of these hazards can be devastating because of their high intensity, placing them at high risk of harm.⁴⁴

Between 2020-2050, climate change is projected to increase the burden of disease in Nigeria by 21%, placing additional strain on an already over-stretched health system.⁴⁵

In Nigeria, malaria is the leading cause of death in children under five⁴⁶ and cases are projected to increase significantly.⁴⁷ Many waterborne diseases will also increase due to climate change, and whilst diarrhoeal fatalities are expected to fall, the share due to climate change will rise.⁴⁸

Key partners:

Government of Nigeria, Paladium Group, UNICEF Nigeria, Halcyon, Crown Agents, DAI, WHO, JigSaw, Fab Inc, Sextant Foundation, UK Met Office

Funders: FCDO, World Bank, Rockefeller

Intervention and Results

A portfolio of FCDO investments in Nigeria has helped to build the enabling environment for climate resilient PHC. Leveraging clear research-to-system-implementation pipelines, the investments have generated evidence on climate-health vulnerability and risk and used this to underpin health sector climate adaptation initiatives, achieving the following:

- **Integrated health into Nigeria's NDC 3.0**, providing the national mandate for climate informed PHC and expanding pathways for international climate finance for health.⁴⁹
- **Developed Climate Change and Health National Vulnerability and Adaptation Assessment**,⁵⁰ creating a baseline for planning and identifying climate-vulnerable groups.
- **Nigeria's first Health National Adaptation Plan (HNAP)**,⁵¹ a national roadmap for climate-resilient health systems and stronger PHC for addressing CSID amongst children.
- **Costed Health State Adaptation Plans** for 15 states (with six more underway), local level plans which use an endorsed list of cost-effective PHC interventions embedded in State operational plans, enabling domestic resource mobilisation.
- **Financial incentives for government provision of climate resilient PHC** by linking funds to agreed milestones on climate resilient PHC in the World Bank's Primary Healthcare Provision Strengthening (HOPE-PHC) Program for Nigeria.⁵²
- **Improved use of weather and climate data for health**, a pilot initiative funded by the Rockefeller Foundation, the WISER Health Nigeria programme, led by the UK-Met Office and national partners seeks to integrate weather and climate information into health decision making for early action to reduce risks from flooding, heat and drought.

Complementing this, FCDO has funded a scalable model of infrastructure improvements at primary healthcare level:

The Climate Resilient Infrastructure for Basic Services in Nigeria (CRIBS),⁵³ led by UNICEF Nigeria, has strengthened the resilience of 45 schools and 39 PHC centres in Kano and Jigawa states.⁵⁴ The development of facility level assessments for climate vulnerability have informed the identification of specific renovations to ensure resilience to climate-related risks, including flood-resistant foundations and WASH, waste-management and vector-control measures. A research component then evaluates the effectiveness of interventions, offering the opportunity to disseminate lessons to contexts beyond Nigeria. Funding has already been secured to scale to 120 more across five states.⁵⁵



The interior of Chamo Primary Healthcare Facility after CRIBS renovations, Jigawa State. © Lafiya Programme.

The Lafiya Programme, FCDO's flagship HSS programme implemented by Palladium,⁵⁶ has provided an important platform for coordinated technical and financial support from FCDO and has a catalytic role to play in mobilising international climate finance for the health sector by strengthening systems, enhancing coordination, and building subnational capacity.⁵⁷

Analysis

This portfolio of investments is an example of how the UK Government's new partnership approach can be realised amid reduced Official Development Assistance (ODA) and still deliver for the most vulnerable:

Closing gaps in access to care: Investment in vulnerability assessments helped to identify opportunities for targeted technical and financial support, with a focus on children as a key climate-vulnerable group. Child-focused priorities, including action on climate-sensitive infectious diseases, were embedded into national and state planning, helping to connect services to the most at-risk and underserved populations while building a more resilient health system for all.

Locally led partnerships: Collaboration with national and state governments to provide technical assistance for planning and to leverage existing programmes helped build sustainable locally led partnerships, catalysed government reform and created opportunities to mobilise further resources from both domestic sources and multilateral institutions. Framing climate risks as a health systems issue rather than a parallel environmental agenda increased policy traction across federal and state levels.

South-South learning: Investment in research components for the impact of CRIBS interventions enabled scale-up across states and led to opportunities for South-South learning. CRIBS is already attracting interest from Ethiopia and Sudan. The CRIBS impact evaluation model provides a strong blueprint for other initiatives on measuring the impact of resilience-building interventions.

Local capacity building: The success of these partnerships also depended on significant investment in local capacity. Both the Lafiya programme and CRIBS prioritised capacity building and advocacy across stakeholders to secure government commitment and build national and local partnerships.

2. Anticipating disease outbreaks with early warning systems for PHC action in Lankien, South Sudan

South Sudan is highly exposed to multiple climate risks, including extreme heat, droughts and more frequent and severe heatwaves. 95% of children in South Sudan are exposed to at least three overlapping hazards which, combined with some of the lowest levels of access to essential services, places them at high climate risk.⁵⁸ The country reports the lowest Human Development Index in the world,⁵⁹ with multiple overlapping crises, including protracted conflict, food insecurity, disease outbreaks and mass displacement. Malaria is endemic in South Sudan and is the leading cause of death amongst children under five.

Only 68% of malaria cases in children under 5 in South Sudan were treated by health facilities in 2024, representing a significant missed opportunity for improving child survival.⁶⁰

Annual variations in the seasonal onset and severity of malaria make planning responses challenging. There is also a narrow window for effective prevention: for children, even short delays in treatment can be fatal, so being able to act before cases surge is critical for saving lives. Yet when rainfall, temperature and other environmental data are modelled alongside disease data, actors can be given advance warning of the likely timing of seasonal onset and burden of disease, creating a window to act before transmission peaks.⁶¹

Key partners:

Médecins Sans Frontières (MSF), The Red Cross Red Crescent Climate Centre (RCCC), Barcelona Supercomputing Center (BSC), Equal Experts

Funders: MSF Internal Funds, The Wellcome Trust

Intervention and Results

Since 2013, MSF has systematically recorded malaria cases in Lankien, Jonglei State in South Sudan. Through the Malaria Anticipation Project with support from Equal Experts, MSF has used this dataset to develop machine learning models to forecast seasonal malaria burden and timing up to two months ahead and integrate outputs into routine decision-making processes.

A partnership with the Wellcome Trust produced a second model combining malaria case data from Lankien with climate and environmental data to predict outbreaks up to seven months ahead, enabling earlier large-scale prevention.

Under an anticipatory action approach,⁶² early warning signals from these models trigger pre-agreed financing, ordering and pre-positioning of supplies, and predefined PHC interventions before malaria surges overwhelm services. The different lead times and seasonal timing of alerts shape different preparedness actions:

- **Longer lead forecasts (>3 months):** Early action package of large-scale prevention, vector control, procurement of essential supplies, surge planning, and health promotion.
- **Shorter-lead forecasts (1-2 months):** Smaller-scale rapid response such as redirecting resources and supplies, community clean-ups, referral pathways, surge staff deployment.
- **Seasonal timing of alerts:** Pre-rainy season alerts guide prepositioning of supplies, while rainy season alerts steer health promotion and surge capacity. These alerts also help predict if outbreaks will coincide with the hunger gap (between harvests) to prepare critical integrated nutrition support.
- **Rolling 1–7 month predictions** extend preparedness windows and build confidence when multiple forecasts align, supporting adaptive programming at the PHC level.

Analysis

Anticipatory action for children: Investing in early warning systems for climate-sensitive disease outbreaks is ultimately an investment in child survival, helping frontline teams to act early enough to provide life-saving interventions. It offers strong sustainability and scalability as systems can be integrated into routine operations and tailored to different contexts or diseases.

Strong data needs sustained financing: MSF's comprehensive 12-year dataset on confirmed malaria cases was key to the model's development. This kind of data is rare in humanitarian contexts due to insecurity, displacement and poor population data, compounded by ongoing funding cuts. But these are also contexts where children are most vulnerable to climate-sensitive infectious diseases. The UK's prioritisation of FCAS is a critical opportunity to invest in sustainable data systems to create opportunities for better long-term health outcomes for children and their communities.

The role of philanthropy: Philanthropic institutions such as The Wellcome Trust are showing keen interest in climate and health. A coalition of over 35 global philanthropies, including Wellcome, pledged a £227 million investment for the implementation of the Belem Action Plan. Funding from philanthropy plays a particularly important role in funding early-stage, higher risk innovation. Governments such as the UK can then complement this by investing to scale proven models and approaches, using their position to leverage additional transparency in use, allocation and access to philanthropic funding to ensure it is reaching those most in need.

UK implementation research partnerships: Ultimately early warning systems will only save lives if the systems to act on them are funded and improved as well and investment in this space must match innovation and research with implementation on the ground. Making the early warning systems in Lankien operational and match real-world decision cycles required close collaboration across climate and health disciplines and between research and delivery partners. The FCDO already has a strong track record of implementation research partnerships that connect UK life sciences and academic institutions with in-country delivery partners and programmes. The UK Government should build on these partnerships to support anticipatory action at the PHC level, particularly in FCAS where children's access to healthcare is most impeded.



MSF primary healthcare providers testing for malaria in Lankien, South Sudan © Médecins Sans Frontières (MSF).

3. Integrated climate resilient PHC and outbreak response in Cox's Bazar, Bangladesh

Bangladesh is one of the most climate-impacted countries in the world, with nearly every child exposed to droughts and tropical storms. 9 in 10 children are exposed to three or more overlapping climate hazards.⁶³ 53 million children under 18 years live in areas exposed to disease vectors.⁶⁴

Climate impacts in Bangladesh are further magnified in dense settlements such as Cox's Bazar where 1.2 million displaced Rohingya refugees including 600,000 children, rely on already overstretched PHC facilities. Flooding and cyclones are damaging WASH infrastructure, triggering outbreaks of malaria, dengue and cholera and disrupting access to essential services, increasing health risks for children and pregnant women who already face limited access to quality care.

Key partners:

Government of Bangladesh,
UNICEF
Bangladesh

Funders: FCDO,
World Bank, Gavi

Intervention and Results

The Government of Bangladesh continues to lead the Rohingya humanitarian response in Cox's Bazar, with UNICEF providing technical and operational support to sustain essential services for refugees and host communities:

1. Climate resilient infrastructure: UNICEF has upgraded six PHC centres, strengthening WASH systems and energy infrastructure, and planting trees to create shaded spaces for patients and their caregivers from heatwaves and heavy rains. With FCDO support, UNICEF has solarised all six facilities, generating monthly savings of £1,002 and reducing dependence on unpredictable energy from the grid⁶⁵. UNICEF also has a programme of vector control and environmental health interventions in communities to further address CSID.

2. Maintaining immunisation: With Gavi and World Bank funded UNICEF support, immunisation services are reinforced by high coverage campaigns, outbreak response and strengthening of supply and cold-chain systems. Immunisation strategies are a key climate adaptation response, particularly in crowded, climate-exposed camps, where outbreaks spread rapidly and disproportionately affect young children.

3. Emergency preparedness & anticipatory action: UNICEF pre-positions delivery kits, ORS and dignity kits ahead of floods or cyclones. Two of the six PHC facilities now act as surveillance sites, improving early detection of outbreaks. UNICEF also ensures safe transport for health workers to the facilities, ensuring staff coverage during emergencies.

Impact: In 2025, **more than 300,000 Rohingya refugees accessed PHC through UNICEF-supported facilities⁶⁶**, enabling timely treatment of CSIDs like malaria, dengue and diarrhoea. Immunisation impact includes a recent typhoid vaccine campaign that reached 424,164 children under 15 with 86% coverage in Cox's Bazar.⁶⁷

Analysis

Leveraging partnerships with multilaterals: As recognised by the IPCC, immunisation is a crucial adaptation strategy for the impact of climate change on health. This case study highlights the important role played by global health multilateral agencies in maintaining essential child health services in complex humanitarian settings as well as supporting critical outbreak response amid rising climate risks. The UK Government has prioritised investment in global health multilaterals in reducing the ODA budget. It must use its influence to drive coordinated action that strengthens long-term climate resilience in health systems, with a focus on the most vulnerable populations, such as un-vaccinated children.

Bridging humanitarian support with up-stream development: The UK's focus on fragile and conflict-affected settings is an opportunity for strong action to support children most at risk from the impacts of climate change, including climate-sensitive diseases. It should consider how to bridge humanitarian support with development efforts to build long-term climate resilience in health systems, to improve child survival and create sustainable and equitable health outcomes for all. UNICEF's approach in Cox's Bazar provides a strong example, strengthening shared services for both refugee and host communities.



Bina Rani, a midwife at a Primary Healthcare Centre, during the introduction and demonstration of a mosquito net to Nurjahan, 20, Ukhia, Cox's Bazaar © UNICEF/Map

4. Delivering care to remote, climate-impacted communities with mobile teams in Ethiopia



Mobile Health and Nutrition Team provides services to children and families in Berguled, Somali region of Ethiopia. © UNICEF/Pouget

Ethiopia is highly exposed to climate shocks, while its overall adaptive capacity remains limited. Children and families, who rely heavily on agriculture and livestock, are highly impacted by droughts, floods and erratic rainfall.⁶⁸

The health system is challenged by conflict-related damage to facilities, workforce shortages and disrupted supply chains. CSID outbreaks are exacerbated by low immunisation coverage, population displacement, and poor access to PHC services, particularly amongst mobile pastoralist communities with high numbers of unvaccinated children. Between January and May 2025, over 4,300 cholera cases and 2.4 million malaria cases were recorded in Ethiopia.⁶⁹

Key partners:

Government of Ethiopia,
UNICEF Ethiopia

Funders: Korea International Cooperation Agency (KOICA), FCDO

Intervention and Results

UNICEF Ethiopia's Mobile Health and Nutrition Teams (MHNTs) have become a mainstay of the country's PHC delivery strategies. These mobile teams close the last mile gap for remote pastoralist communities who would otherwise remain unreached and for whom climate shocks, conflict, and displacement have severely disrupted access to routine PHC.⁷⁰

The model

- **The team:** Each MHNT team comprises 6 people: 2 clinical nurses, 1 nutritional nurse, 1 vaccination nurse, 1 social mobiliser and 1 driver. At peak, 29 teams were operating; now the number of teams varies based on available funding.
- **Operations:** MHNTs reach 6 sites per week, selected with government health offices based on criteria such as recurrent emergencies (i.e. extreme weather events or conflict), weak or absent PHC units, and remote populations.
- **The MHNT service package** is flexible, adjusting to budget and emergency needs, while consistently delivering core maternal and child health services, including immunisation, nutrition, gender-based violence services, disease surveillance, and emergency response.
- **Teams also strengthen local government systems** by supporting health offices with capacity building, outbreak alerts, logistics and refurbishments.

Impact: Reporting from November 2025 to April 2026 shows that across the Somali and Afar Regions **156,570 medical consultations were delivered by MNHTs, 42% of which were for children under five years.** Within just the Afar region over this period 27,060 cases of malaria were diagnosed.⁷¹

Analysis

Integrated outreach models to reach the last mile: this shows how a relatively simple integrated outreach model can close the last mile gap for remote communities who would otherwise remain unreached. The inherent flexibility of MHNTs allows teams to rapidly respond to emerging needs such as disease outbreaks, extreme weather events, or conflict-related disruptions. As recognised by the UK's Healthy Women Newborn and Child approach, integrated and early care is critical for child survival.

But relatively high recurrent costs (around £638 per team per month) mean sustained investment is important. Operating in remote places within challenging landscapes puts immense strain on individuals engaged in delivery while vehicles and equipment require intensive upkeep.

Building the evidence base on the cost of inaction is needed to strengthen domestic resource mobilisation as well as drive international funding. Cost of inaction studies would demonstrate that without MHNTs, remote communities would face worsening illness and higher future health expenditures, ultimately making the absence of mobile services far more costly than sustaining them. As the UK's Healthy Women Newborn and Child approach transitions towards a technical assistance programme, the use of UK expertise and partnerships to strengthen the case for mobile outreach teams could ensure continued impact for maternal, neonatal and child survival, particularly in climate-affected populations.



Rapid diagnostic tests for malaria and treatment of children under five by Gulina MHNT team © UNICEF.
For additional information: [video](#) snapshot of an MHNT in Afar Region by UNICEF Ethiopia.

5. Using climate finance to build climate resilient PHC in Lao PDR

Lao PDR faces significant exposure to storms, floods, landslides, drought, extreme heat and worsening air pollution, causing disruptions across every sector and community.

Four in five children are exposed to three or more overlapping hazards, with 85% facing more frequent heatwaves and 64% living in areas at risk of tropical storms. Over half of all children in Lao are exposed to climate hazards that intensify long-standing vulnerabilities and spread infectious disease, particularly for women, adolescents and children.⁷²

Key partners: Government of Lao PDR, Save the Children, WHO

Funders: Green Climate Fund

The country's PHC infrastructure is also at particular risk, with over 44% of facilities impacted by storms and floods, 39% by droughts and 21 % being classed as having either high, very high or extreme vulnerability to climate hazards.⁷³

Rainfall extremes in Lao PDR are driving two different CSID patterns: heavier and more frequent rains are creating new and larger breeding sites for Aedes mosquitoes thereby fuelling dengue outbreaks,⁷⁴ while extended periods of low rainfall and high temperatures are linked to spikes in diarrhoeal disease as communities turn to poorer-quality water sources.⁷⁵

Intervention and Results

The first climate-health initiative supported by the Green Climate Fund (GCF) is co-implemented by the Ministry of Health, Save the Children and WHO. It pairs efforts to build the health system's climate resilience through strengthened governance and information systems, with intensified support in 25 of Lao's most climate-vulnerable districts, benefiting over 1.8 million people.

Grounded in robust national vulnerability assessments and detailed site and supply-chain analyses, the initiative identifies and targets priority risks such as vector-and water-borne diseases and the growing burden of extreme weather on communities and health facilities.⁷⁶ It drives climate action across the WHO health system building blocks:

Climate resilient leadership and governance Strengthening implementation of the HNAP through development and dissemination of guidelines and handbooks at national, provincial and local levels.	Climate informed health information systems (HIS) Integration of climate/weather data into Lao's HIS, including DHIS2 and scale-up of a Climate Integrated Early Warning and Response System (CI-EWARS) for dengue and diarrheal diseases.	Climate resilient service delivery Strengthening the capacity of health workers to plan for, monitor, detect and treat CSID. Infrastructure resilience strengthening (WASH, water and energy).	Responsive and informed community-based action Risk communication, community engagement and capacity building. Supporting communities to develop health and climate resilience action plans.
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Analysis

Using International Climate Finance (ICF) for large-scale climate-health action: As the first GCF-funded climate-health project, this programme is helping pave the way for further health-sector adaptation. It shows how international climate finance can scale proven health interventions and work through global health institutions and national systems, rather than creating parallel structures. However, whilst this funding is catalytic in many ways, it only covers ten of eighteen provinces and two of the climate-sensitive diseases, highlighting a need to crowd in funding from multiple sources to complement it. The UK's ICF Strategy 2026 provides a clear mandate to support climate-resilient health systems.⁷⁷ The next step should be to translate this commitment into a more strategic financing approach to health-sector adaptation, including through UK investments in global health institutions and multilateral climate and environment funds.

Building capacity to use climate data for health: While the integration of climate and health data offers critical opportunities for the development of early warning systems, (see also Case Studies 1 and 2) specialised training, equipment and time is needed to support health teams in working with climate data. Global best practice for how climate and health data is coordinated, shared and integrated to ensure interoperability between data systems and sectors is still evolving. The same can be said of the use of integrated analysis for policy and programme decision-making.

In Lao PDR, this has highlighted the need for clear governance arrangements, with WHO supporting the Ministry of Health and the Ministry of the Environment to put in place coordination mechanisms and data-sharing agreements. The parallel investments to the online health information system platform (DHIS2) in Lao PDR under a Wellcome Trust funded initiative to integrate climate and health data have complemented these GCF investments and speak to the need for joined up action to ensure data is effectively applied across the health and other sectors.



GCF-funded Health Facility visit by Lao PDR's Health Minister, the WHO Deputy Representative and Ministry of Health officials.

Section 3: The UK's strategy for climate and health



A solar-powered water system at a Kisaw District Hospital in Daikudi, Afghanistan, built with support from UK aid. © UNICEF/UNI981283/Fazel

The UK has made a significant contribution to progress for global maternal and child survival through decades of strategic ODA investment and multilateral leadership, as detailed in UNICEF UK's Survive and Thrive report.⁷⁸ Recent UK strategies for global health recognise climate change as one of the most serious threats to universal healthcare and to global health security. Across several position papers, the UK has committed to strengthening health systems to protect populations from the impacts of climate change, particularly from changing patterns of infectious disease. Within this, the UK's approach to health system strengthening has emphasised the need for integrated health services, a core principle of PHC. Climate resilience is identified as important not only for global health security but also specifically for maternal and child survival in the UK's approach to Ending Preventable Deaths of women, children and newborns. These strategic priorities are reflected in an ecosystem of bilateral and multilateral investments, connecting research to implementation in support of climate-resilient PHC (detailed further in Annex 2).

A different story is told through the UK's strategies for climate. Despite demonstrating strong leadership in building political momentum for the integration of climate and health agendas at COP26 in Glasgow, an understanding of health and climate as interconnected priorities is not reflected in the UK's ICF investments. Analysis by UNICEF UK's Shortchanged report found only around 1% of ICF was invested in child-focused health interventions between 2011 and 2023.⁷⁹

Significant cuts to ODA undermine the UK's ability to turn global health and climate priorities into a reality which delivers for the most vulnerable populations. Although the UK Government has named these as priorities, the scale of cutting the UK aid budget from 0.5% to 0.3% of GNI already is inevitably contracting and ending significant programmes supporting climate-resilient health systems strengthening. Most importantly, and indeed, as recognised by the FCDO's Equalities Impact Assessments, these cuts to the UK aid budget risk losing sight of the most vulnerable groups. Analysis by UNICEF UK found previous cuts to UK ODA disproportionately affected child-focused sectors including health, WASH, education and nutrition, identifying a strategic neglect of the unique needs of children in the UK's international development approach since 2016.⁸⁰

While UK ICF has been relatively protected from current and previous cuts to the UK aid budget, there is a similar decline in child-focused spending, with only 11% of bilateral ICF spending identified as child-focused between 2011 and 2023. In a global context where children's unique vulnerability to climate change puts them at heightened risk of the most severe health, nutrition and protection impacts, this contraction in child-focused ICF signals a widening gap between where climate resources are allocated and where they are most urgently needed.

Without conscious efforts to prioritise children within UK investments for global health and climate change, the UK risks not achieving its goals across two of its named priorities – health and climate change.

Through its new International Climate Finance Strategy, published in June 2026, the UK took an important step in committing to support people-centred adaptation and to build resilient health systems.⁸¹ However, the strategy fell short of addressing the needs of the most vulnerable groups, including children, and of setting out priorities for its climate resilient health portfolio. Looking towards the imminent publication of a new Global Health Framework, the UK Government has a critical opportunity to ensure integration of climate-resilient health systems in both agendas and that investments are focused on children, where resources are urgently needed.

The UK Government is redefining how it delivers international development in a context of reduced ODA and wider global funding pressures. It has described a modern partnership approach: shifting from donor to investor; moving from direct service delivery towards systems support; making greater use of technical expertise alongside finance; and placing more power with local governments, civil society and communities to determine priorities.

Climate-resilient PHC offers a practical example of how this approach can deliver for children.

Targeted, catalytic investments, backed by UK technical expertise, can strengthen integrated systems, build local capacity and support nationally led action. The case studies in this report show that such investments are already driving impact for highly vulnerable populations and helping to build momentum at national and sub-national levels.

As pressures from climate change, conflict, poverty and health insecurity grow, children have the most to lose if this shift fails to protect essential services — and the most to gain if it is used to scale what works. Sustaining and expanding climate-resilient PHC will therefore be essential to ensuring that the gains from decades of UK investment in global child health are not lost in a reduced ODA context.

3.1 UK programming on climate and health

Principal UK ODA investment routes for climate and healthⁱ



Climate and health research

Partnership with IDRC for five research hubs

The FCDO's Climate and Health Research Programme (CHIRP) aims to strengthen the evidence base on climate resilience of health systems in LMICs. It is designed across three pillars: 1) building the evidence base on how to optimise the use of PHC systems to build climate resilience; 2) researching the health impacts of FCDO-funded climate interventions in LMICs; and 3) building evidence on climate mitigation policies and practices for health systems. Funding cuts have paused progress on Pillars 2 and 3 however, limiting the development of important evaluation methodologies for climate-health initiatives that could support resource mobilisation in LMICs and South-South learning.



Climate resilient health systems

Co-established ATACH with WHO; support to the WB Health System Transformation & Resilience Fund.

Climate Resilient and Sustainable Health Systems Programme (CRSHS) is the FCDO's flagship programmatic initiative for climate-resilient health system strengthening. Through CRSHS, the UK has provided leadership in the coordination and integration of global efforts to build health systems that can withstand climate shocks. This included delivering the UK co-leadership of the Alliance for Transformative Action on Climate and Health (ATACH) with the World Health Organization; initiating, alongside the Government of Japan and the Helmsing Foundation, the Health Systems Transformation and Resilience Fund (HSTRF) with the World Bank;ⁱⁱ and supporting the Climate and

ⁱAnnex 2 provides further information, highlighting how climate resilience is integrated into implementation, and more specifically related to action on CSID at PHC level.

ⁱⁱThrough funding to the HSTRF, FCDO was able to steer larger World Bank investments (i.e. the International Development Association and the International Bank for Reconstruction and Development) to incorporate climate considerations and thereby build resilience through those lending portfolios.

Clean Air Coalition (CCAC) to integrate health into their approach. However, due to funding cuts, the CRSHS Programme is planned to close earlier than planned in 2026/27, with elements of the programme expected to transition into broader health systems portfolios and into future Communities of Expertise. Ongoing collaboration with the UK Met Office through FCDO-funded climate programmes is exploring the use of climate information services for health (see Case Study 1 on Nigeria for further details). This strategic partnership has been consolidated in a new initiative supporting AI forecasting to predict weather patterns for climate security.⁸²



Bilateral funding

Technical Support Programme for Health; Tackling Deadly Diseases in Africa Programme 2; Evidence for Health/Lafiya

Bilateral Funding: FCDO's bilateral funding for climate and health has increasingly focused on integrating climate-resilience into core health systems strengthening programmes, with centrally managed bilateral programmes (such as the Lafiya programme in Nigeria) embedding climate risk considerations directly into their workplans and delivery models.

The UK's stated prioritisation of multilateral investments means that bilateral programming is where UK funding cuts will be felt the most, forcing the closure or scaling-back of primary health care, SRHR, nutrition and child health initiatives in many low income and climate-vulnerable countries. It is essential that the groundwork and learning from this work is not lost, rather fed into the future Communities of Expertise and more broadly into the UK's health and climate portfolios going forwards.



Multilateral engagement

Support for global institutions: WHO, UNICEF, UNFPA, Gavi, Global Fund, Unitaid, Global Financing Facility, Green Climate Fund

Multilateral Engagement: FCDO continues to channel a significant share of its global health ODA through major multilateral organisations.

Across the multilateral health investments the UK has made, there are strong recent commitments to addressing the impact of climate through systems strengthening, with a particular focus on PHC, preparedness and disease surveillance. Many of the strategies have explicit goals to identify and reach the most vulnerable populations through community-based systems. The international climate finance mechanisms in which the UK invests have also recently begun establishing climate-health initiatives, such as the GCF initiative in Laos (detailed in Case Study 5).

Aid cuts risk undermining the implementation of what are very new but very promising climate-health strategies. Although multilateral funding has been relatively protected from UK aid cuts, UK pledges to several global health multilaterals including Gavi, the Global Fund and the WHO have still had to reduce. In 2026, the UK also halved a pledge made to the Green Climate Fund three years before. Many of these multilaterals are also facing significant funding cuts and efforts to reform the global aid architecture are underway, with new partnership and financing models emerging to drive efficiencies. The UK must use its influence on governance boards to drive these agendas forward, supporting implementation using experience from bilateral programming as well as using its convening influence to bring together these different investments into aligned strategies.

Diplomacy, influence and partnerships

Using its convening power and technical expertise to drive coherent action across sectors, the UK has played a catalytic role in elevating consideration of climate-health within global strategies and action plans- most visibly through its leadership of ATACH, contributions to the Belém Health Action Plan, and sustained engagement with G7, G20 and COP processes. FCDO has helped embed climate-health considerations within global frameworks, ensuring these priorities are reflected in financing mechanisms, technical guidance and country level implementation. This diplomacy led approach allows the UK to continue to exert influence beyond its shrinking ODA portfolio.

Section 4: Policy recommendations



Nurse Basro administers the polio vaccine at a health facility within the Jilab Internally Displaced Persons (IDP) camp in Garowe, Somalia, a region facing ongoing challenges of displacement due to climate shocks, conflict and disease outbreaks. © UNI651427/UNICEF Somalia

The recommendations that follow draw together lessons from across the analysis and five case studies, highlighting where UK leadership can make the greatest difference for children living on the frontlines of climate change. They show that strategic, sustained investment, anchored in strong national systems, aligned partnerships, and a focus on the most vulnerable can accelerate progress on child survival even as climate risks intensify.

The UK has also built a strong ecosystem of evidence and expertise on climate and health that it can now leverage beyond its funding. Utilising this foundation alongside its global convening position, the UK can continue to shape the global agenda on climate and health, ensuring that initiatives protect children in a rapidly changing climate.

1. Embed the needs of children, as the most climate-vulnerable population at the heart of UK investments and strategies for international development, including global health and international climate finance.

- Commit to spending 25% of ODA on critical systems for children, including health and nutrition, to support children to cope with a changing climate.
- Within a new Global Health strategy, embed a primary healthcare approach that is emergency ready, meeting the needs of children for climate-resilient services and building climate-informed health security for all.
- Prioritise investment in the adaptation and resilience of social systems like health and WASH in the 4th International Climate Finance cycle in line with the 2026 International Climate Finance Strategy.
- Ensure investments in fragile and conflict affected states support initiatives that bridge humanitarian and development approaches to drive long-term climate resilience, focusing on maintaining service access during and after climate shocks.

2. Leverage UK funding and influence to drive coordinated global action on climate and health.

- Actively participate on the boards of GHIs to align fragmented climate and health strategies, ensuring a coordinated approach to delivering climate-resilient PHC for children.
- Draw on the in-country operational footprint and institutional connections of existing bilateral programmes and partnerships to support GHIs to implement climate resilient health system strengthening at subnational levels.
- Partner with multilateral climate funds and multilateral development banks to accelerate delivery of climate finance for climate and health solutions, encouraging investment in proven, high-impact, high-value PHC interventions that strengthen climate resilience.
- Provide technical expertise, policy support and co-financing to advance the implementation of the Belém Health Action Plan and of evidence-based Health National Adaptation Plans that promote climate resilient PHC as a core climate adaptation strategy.
- Use UK investments to scale proven innovations, aligning with initiatives funded by philanthropic donors aimed at accelerating proven solutions such as the Climate and Health Funders Coalition.

3. Maintain and strengthen UK expertise and partnerships for climate-resilient PHC through the FCDO's new Communities of Expertise.

- Protect and scale proven bilateral partnerships which link research and implementation to deliver climate-resilient PHC and unlock additional funding to support country priorities.
- Continue to provide strategic technical assistance to national and state governments to support whole-system strengthening for children, including the development of local evidence on climate vulnerability, adaptation capacity and policy responses to health risks.
- Expand successful programme partnerships by facilitating South-South learning on implementing climate-resilient PHC.
- Prioritise local capacity building for the sustainable integration of climate and health action at all levels.

4. Invest in action-oriented research and evidence that supports increased investment, better PHC level decision-making, and scaling up of interventions that work to protect child health in a changing climate, including on:

- The impact of climate on children across the life course and on infectious diseases where children face the highest burdens.
- The identification, piloting and scale-up of new innovations in climate resilient PHC that are both high-impact and high-value.
- The integration and use of climate and health data, particularly to support anticipatory primary healthcare and the application of climate services within the broader health sector.
- The cost of inaction of not investing in climate-resilient PHC, and the return on investment of implementing specific interventions, to support resource mobilisation.
- The development of global and country-level estimates of child mortality or morbidity related to climate change hazards, and of evaluation methodologies for measuring the impact of interventions to improve resilience of health systems.

Annex 1: Key definitions

Adaptation	In human systems, the process of adjustment to actual or expected climate and its effects, to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects IPCC Glossary Search .
Climate change	A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. IPCC Glossary Search .
Climate mitigation	A human intervention to reduce emissions or enhance the sinks of greenhouse gases (GHGs). IPCC Glossary Search .
Climate resilience	The capacity of a community or environment to anticipate and manage climate impacts, minimise their damage, and recover and transform as needed after the initial shock. UNDP .
Climate vulnerability	The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt. IPCC .
Climate-sensitive infectious diseases	Illnesses whose incidence, intensity or distribution is impacted by climate and weather conditions. These diseases can be directly or indirectly influenced by variations in temperature, precipitation, humidity and extreme weather events. Examples include vector-borne diseases, such as malaria and dengue fever, transmitted by mosquitoes that thrive in warmer and wetter climates, and water-borne diseases such as cholera, which may increase with flooding and inadequate water sanitation. WHO .
Early warning systems	The set of technical, financial and institutional capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organisations threatened by a hazard to prepare to act promptly and appropriately to the possibility of harm or loss. IPCC .
Gender equality	The concept that women and men, girls and boys have equal conditions, treatment and opportunities for realising their full potential, human rights and dignity, and for contributing to (and benefitting from) economic, social, cultural and political development. UNICEF .
Primary Healthcare	PHC is a whole-of-society approach to health that aims at ensuring the highest possible level of health and well-being and their equitable distribution by focusing on people's needs and as early as possible along the continuum from health promotion and disease prevention to treatment, rehabilitation and palliative care, and as close as feasible to people's everyday environment. WHO/UNICEF .

Annex 2: Overview of principal UK investments in climate and health

Investment route	Overview of initiative
Centrally managed programmes	
Climate and Health Research Programme (CHIRP)	CHIRP aims to generate evidence on climate and health, with a focus on how to implement climate-resilient health systems in LMICs that protect vulnerable populations. ⁸² With up to £20 million available from 2024–2029, early delivery has focused on partnering with Canada’s International Development Research Centre (IDRC) to co-fund the Advancing Research for Climate and Health (ARCH) programme. Through ARCH, IDRC has established five regional research hubs in Colombia, Malaysia, Lebanon, Ghana and Kenya to build evidence on climate-resilient PHC systems.
Climate Resilient and Sustainable Health Systems (CRSHS) Programme	The CRSHS Programme is FCDO’s flagship £18 million initiative (2023–2028) to strengthen climate-resilient and low-carbon, sustainable health systems in LMICs. ⁸³ It delivers through four core functions: (1) enhancing global leadership via co-leadership of ATACH; (2) providing catalytic TA for vulnerability assessments, adaptation and mitigation planning, and investment cases; (3) mobilising resources and leveraging ICF, including through the new Health Systems Transformation and Resilience Fund (HSTRF) with the World Bank; (4) supporting action on air pollution through partnerships such as the Climate and Clean Air Coalition. The programme is expanding its influence by embedding health components into existing FCDO climate programmes, including pilots within WISER and CREWS programmes in Nigeria and South Africa. Due to FCDO restructuring and ongoing ODA reductions the CRSHS Programme is planned to close in 2026/27. Elements of the programme are expected to transition into a broader health systems offer and future Communities of Expertise.
Bilateral programmes	
The Technical Support Programme for Health Implemented by DAI	Previously the EPD Support Programme, this is a demand-driven technical support facility that aims to deliver targeted TA for health. There is a technical focus on strengthening health systems and financing, supporting equity and rights initiatives (including sexual and reproductive health), and promoting healthier lives and environments, including work on WASH, nutrition, and climate-health linkages. Originally implemented in 11 EPD flagship countries, the programme now prioritises requests from countries with limited/no bilateral health spend. Climate change is integrated as a sub-theme, and countries can request TA support for health sector adaptation work if there is a need.
Evidence for Health (Pakistan) Implemented by Palladium Group	E4H is a health system strengthening TA programme ⁸⁴ that works in close partnership with the federal government and the provincial governments of Punjab and Khyber Pakhtunkhwa (KP), to support CRVA evaluation of health system vulnerabilities, capacities and future risks and the development of state-level climate health adaptation plans.

Investment route	Overview of initiative
Bilateral programmes (continued)	
Tackling Deadly Diseases in Africa Programme 2 Implemented by Palladium Group	Through TDDAP2, FCDO is supporting DRC, Ghana, Kenya, Malawi, and Uganda to ensure that national and community systems are better prepared and able to prevent, detect and respond to public health threats and outbreaks. ⁸⁵ As part of this, TDDAP2 has supported countries to strengthen disease surveillance, laboratory systems and emergency preparedness. There has also been TA support for the integration of climate-health data into National Action Plan for Health Security (NAPHS) development and operational planning.
Lafiya (Nigeria) Implemented by Palladium Group	Lafiya is FCDO Nigeria's flagship health systems strengthening programme. ⁸⁶ It has embedded climate resilience into its health systems approach and has been a key stakeholder supporting the country's response to climate change. The programme has provided technical, operational and governance support to the national CRVA and HNAP process and state-level planning. It has also been leveraged as a platform for increasing impact on the ground using catalytic TA. See Case Study 1 for details.
Multilateral programmes	
Gavi, the Vaccine Alliance	A core Gavi partner for over two decades, the UK's latest £1.25 billion pledge for Gavi 6.0 has been protected from recent ODA cuts. ⁸⁷ For 2026–2030, Gavi 6.0 includes 'climate-sensitive' as one of the ten principles. ⁸⁸ Its approach to climate focuses on strengthening vaccine systems to adapt to climate-sensitive diseases, including surveillance and scaling up emergency vaccine stockpiles; reducing the carbon footprint of immunisation programs, positioning immunisation as a key adaptation strategy within NAPs and investing in sustainable, solar-powered, and energy-efficient "last mile" cold chain technologies.
Global Fund to Fight AIDS, TB and Malaria	Whilst UK contributions to the Global Fund have been declining in recent replenishment cycles, it has remained relatively protected with an £850 million pledge to the Fund for 2026–2028. ⁸⁹ The Global Fund's 2023–2028 Strategy integrates climate change as a critical threat to ending AIDS, TB, and malaria. ⁹⁰ Around 70% of funds are invested in climate-vulnerable areas. ⁹¹ The Global Fund invests £1.5 billion a year to build climate-resilient health and community systems, ⁹² including supporting community-based PHC and digitising health records. It has also launched a £37.9 million Climate and Health Catalytic Fund to provide agile funding. ⁹³
WHO	Through core contributions and targeted funding, the UK supports WHO leadership, emergency response, research and technical guidance on climate-resilient health systems. The UK's co-leadership of ATACH with WHO positions it at the centre of global efforts on climate resilient and low carbon health systems. WHO's technical guidance, partnerships at global and national levels and research agendas on the climate impacts to health and health systems provide a unified global framework for action on climate and health and country level capacity building.
UNICEF	UK ODA through UNICEF helps reach the most marginalised children in fragile and climate-vulnerable settings. A critical delivery partner for child health, nutrition and WASH, UNICEF plays a central role in strengthening PHC platforms, expanding immunisation, and supporting climate-resilient services for children. The UNICEF Sustainability and Climate Change Action Plan 2023–2030 galvanizes a global commitment to protect children from the impacts of climate change, empower them to act, and reduce the organization's own environmental footprint. ⁹⁴

Investment route	Overview of initiative
Multilateral programmes (continued)	
UNFPA	The UK's support to UNFPA funds essential sexual and reproductive health and rights (SRHR) services. UNFPA's work is increasingly linked to climate adaptation and resilience building, recognising the gendered impacts of climate shocks on SRHR access as well as centring youth-led climate action in adaptation response. This is exemplified in the UNFPA Strategic Plan 2026–2029, which embeds a climate-resilient approach across all four outcome areas. ⁹⁵
UNITAID	The UK's support to Unitaid contributes to the development and scale-up of innovative health technologies that strengthen climate-resilient PHC, including tools for early diagnosis, treatment and prevention of CSID. Unitaid's strategic approach to climate change, anchored in its 2023-2027 Strategy, helps ensure that new products remain affordable and accessible as climate change alters disease patterns, while also advancing low-carbon, sustainable approaches to supply chains and service delivery. ⁹⁶
World Bank	Through IDA, the WB is a major partner in health systems strengthening, climate adaptation and financial protection. The World Bank's Climate and Health Program ⁹⁷ has three aims: (1) to assess country climate-health vulnerabilities and impacts to design country-tailored solutions; (2) to scale up investments to build low-carbon resilient health systems; and (3) to build and deepen partnerships at global, regional, and country levels to multiply and magnify these efforts. The World Bank's Health Systems Transformation and Resilience Fund, ⁹⁸ supported by the UK Government, offers a pooled fund for health system strengthening, with tailored support for building climate resilience particularly for African and East Asian countries.
Global Financing Facility	The UK is a long-standing supporter of the GFF, providing financial contributions and playing a governance role to advance reproductive, maternal, newborn, child and adolescent health and nutrition (RMNCAH-N), in alignment with the UK's Ending Preventable Deaths agenda. £20 million of the UK's 2023 pledge to GFF was UK ICF to encourage climate integration. In its 2026-2030 strategy ⁹⁹ the GFF will seek opportunities to integrate climate resilience into country health plans and bolster country capacity to address climate-related morbidities and secure access to RMNCAH-N services during climate events. The GFF will support countries to integrate climate interventions in their PHC strengthening plans: focusing on health system climate assessments that prioritise the needs of women, children, and adolescents; advice and support for structural adaptations of health facilities to provide heat and flood-resistant services; assessment of specific vulnerabilities faced by women, children and adolescents in different climate threat contexts; and embedding climate adaptations necessary for RMNCAH-N services within regional disease surveillance and preparedness.
Contributions to Global Climate Finance Mechanisms	The UK contributes to major international climate finance mechanisms such as the Green Climate Fund (GCF), the Global Environment Facility (GEF), and the Adaptation Fund, which collectively support low-carbon development, climate adaptation, and resilience in LMIC. Notably, through the GCF, the UK helps finance large-scale adaptation programmes that strengthen climate-resilient infrastructure, early warning systems, and community-based resilience, many of which have direct health co-benefits such as improved water security, reduced climate-sensitive disease risks, and strengthened service continuity for PHC facilities. The GCF now has several health-system focused programmes that include a focus on PHC level climate resilience. See Case Study 5 for an overview of the first one funded by GCF.

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