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# The Climate Adaptation Crisis in Global Health

Rebuilding U.S. Foreign Policy Leadership on Adaptation in a Divided, Warming World

Thomas J. Bollyky September 2025 The mission of the Council on Foreign Relations is to inform U.S. engagement with the world. Founded in 1921, CFR is a nonpartisan, independent national membership organization, think tank, educator, and publisher, including of *Foreign Affairs*. It generates policy-relevant ideas and analysis, convenes experts and policymakers, and promotes informed public discussion—all to have impact on the most consequential issues facing the United States and the world.

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## Introduction

With 2025 past its midpoint, the world is on track for its second hottest year on record, trailing only the sweltering global temperatures of 2024. Despite ample warnings, nations have not done enough to cut emissions at the scale and speed required, and temperatures are likely to rise by 3°C (5.4°F) or more this century. The consequences of runaway climate change will be far-reaching, especially for global health. Low- and middle-income countries will experience the heaviest health toll, where poor households and fragile health, food, and water and sanitation systems are ill-equipped to handle higher temperatures, extreme weather events, increased air pollution, and more vector-borne diseases. In 2020, World Bank researchers estimated that the health consequences of climate change would push 44 million people into poverty over the course of a decade. <sup>2</sup>

The world should not give up on slowing the rise in global temperatures, but countries need to plan for the likelihood that emissions-reduction targets will not be met and invest accordingly, while there is still time to prepare for the worst impacts of climate change for global health. To date, however, U.S. and multilateral efforts on climate have tended to prioritize *mitigation*—preventing fast-rising temperatures—over *adaptation*—creating and distributing the tools, resources, and research to manage their current or projected consequences, including for health.<sup>3</sup> Policymakers have highlighted climate-related health risks to rally popular support for mitigation rather than as a reason to prioritize health adaptation efforts.<sup>4</sup> The statistics tell the story: less than 10 percent of global climate finance is directed toward adaptation, and by World Health Organization estimates, only 0.5 percent of adaptation spending goes to the health sector.<sup>5</sup>

The success of bolstering that adaptation effort—and the safety of all Americans—will depend on the resources, technology, technical capacity, and leadership that the United States can provide to help prepare for a hotter world. The foundation for that sea change in U.S. foreign policy, however, will need to be built under inauspicious circumstances.

Climate adaptation has long been a tough sell from a U.S. foreign policy perspective, lagging broader U.S. global health investments. Although the gains from reducing greenhouse gas emissions are broadly shared, climate adaptation interventions differ by location and sector, requiring bespoke plans, local capabilities, and sustained funding. Such interventions can include urban planning to reduce air pollution and the toll of extreme heat, vector control programs to manage disease-carrying insects, health workforce training and retention, and clean water and sanitation investments resilient to drought and flooding. Urban design for extreme heat and walls for rising sea levels help contain economic and health threats where they happen, but cooperation on those interventions abroad does not help the United States prevent them from happening at home. Consequently, most donor countries, including the United States, have prioritized cross-border infectious disease threats over other health harms in climate-health adaptation financing and in their global health strategies.

On its first day in office, the Trump administration withdrew the United States from the Paris Agreement for a second time and drastically scaled back U.S. climate engagement. The United States also withdrew from the World Health Organization, leaving a \$600 million shortfall (approximately 20).

percent) in the budget of the international organization seeking to prioritize climate change as "the greatest threat to global health in the 21st century." <sup>10</sup> In February, the Trump administration effectively dismantled the U.S. Agency for International Development (USAID), reducing its annual global health awards by 80 percent and ending more than 150 USAID climate and clean energy contracts and grants valued at \$1.2 billion. <sup>11</sup> In March, the National Institutes of Health (NIH) closed its climate-health research portfolio, halting research programs aimed at building population resilience and stronger health systems. The U.S. Department of Energy released a report in July that maintains that U.S. mortality risks from higher temperatures and extreme weather are overstated. <sup>12</sup>

As the United States retreats from climate–global health leadership, it is likely to weaken international support and collaboration on issues including pandemic preparedness, heat resilience, and vector-borne disease forecasting. This will particularly hurt low- and middle-income countries, where there is a staggering gap between the need for adaptation and their current financing. At the 2024 UN climate summit (COP29), countries committed to a new collective quantified goal, aiming to deliver \$300 billion annually by 2035 for climate action in developing countries, with a focus on balancing mitigation and adaptation. Between 2021 and 2024, however, financial pledges to the UN Framework Convention on Climate Change (UNFCCC) Adaptation Fund decreased from \$355.6 million to \$130.7 million and to the Least-Developed Countries Fund from \$413.1 million to \$12.2 million. That gap is only becoming harder to shrink given the grim U.S. fiscal situation and the skepticism of U.S. voters and politicians toward foreign aid. Geopolitical competition and the still-raging conflict in Ukraine are increasing demands for more national security spending in other donor nations. There have been steep cuts in foreign aid spending by Belgium (-25 percent), Germany (-27 percent), France (-37 percent), and the UK (-40 percent).

This report builds on a Council on Foreign Relations advisory committee on U.S. foreign policy and climate change adaptation in global health that was convened from September 2024 to June 2025—a period in which U.S. policy on those topics changed significantly. Moving forward, U.S. foreign policy on global health can no longer avoid climate adaptation, but it also needs to be built on a pragmatic strategy that accounts for today's partisan disagreements, advances U.S. interests, and better aligns with the priorities of American voters. The political obstacles to making this transition are formidable. Understanding the adaptation crisis in global health and the evolution of climate adaptation in U.S. foreign policy on global health helps lay the groundwork for future progress despite the present headwinds.

### The Climate Crisis Is a Health Crisis

Climate risks affect health directly, with high temperatures, wildfires, floods, and other extreme weather events causing widespread injury and deaths. Climate risks also harm health indirectly by undermining the capacity of the environment and food systems to meet human health needs by reducing soil, air, and water quality; by disrupting healthcare and sanitation infrastructure; and by shifting land use and the distribution of mosquitos, ticks, bats, and other vectors of infectious disease. Some entities, such as the Intergovernmental Panel on Climate Change (IPCC) and World Health Organization (WHO), estimate a relatively modest additional annual toll of 250,000 deaths by 2050 from climate-related factors, less than the 274,000 estimated total deaths from drowning worldwide. Other researchers, however, project rising global temperatures to be far deadlier, with millions dying due to climate-driven exposure to pathogens that systemically increase the toll of everyday infectious diseases and boost the likelihood of the next deadly new pandemic.

Although some climate-related health threats are global, such as the potential emergence of a dangerous new pathogen, the severity of other health harms from a warming world will vary by geography and the vulnerability of the local population. Fewer people are likely to die in Europe and North America because populations are wealthier, have better infrastructure, and some of the health toll from hot temperatures will be offset by fewer deaths from the cold. Meanwhile, people living at lower latitudes—the Middle East, the Sahel, South Asia, Southeast Asia, and parts of South America are projected to suffer most of the mortality related to extreme heat and childhood undernutrition due to drought and crop failures. 20 High ambient temperatures and poor air quality from pollution and wildfires also boost the rates of cardiovascular illnesses, stroke, asthma, and chronic obstructive pulmonary disease in those regions.<sup>21</sup> Extreme weather events, particularly floods and heavy rainfall in coastal areas with limited infrastructure, can contaminate water supplies and increase the incidence of diarrheal disease and cholera outbreaks. In the Sahel region, rapid population growth is compounding the health threats of climate change, further straining limited health systems and food, water, and other resources. <sup>22</sup> The WHO projects that climate-driven reductions in agricultural productivity will put eighty million people at risk of hunger in Central America, South Asia, and sub-Saharan Africa. 23 The World Bank has projected climate change will have particularly "devastating impacts on health across low- and middle-income countries (LMICs)," causing "trillions of dollars in economic costs" through 2050 and "delaying much-needed development." 24

Climate events are a threat multiplier, often exposing multiple problems including distrust of the government, fragmented public health systems, neglected infrastructure, overpopulated flood plains and areas prone to wildfire, and poor agricultural practices.<sup>25</sup> Framing those issues as climate threats requiring adaptation can shift the focus away from the underlying policy failures and social vulnerabilities that make communities more exposed. For this reason, scientists caution against overattributing negative health outcomes from extreme climate events to climate change.<sup>26</sup>

# Rough Road to Adaptation

U.S. foreign policy has long prioritized secure access to fossil fuels as a vital national interest, foundational to U.S. military and economic power. Preparing for the dangers that rising greenhouse gas emissions and a warming world could pose to U.S. lives and livelihoods has historically not ranked as highly in the hierarchy of U.S. foreign policy interests, even within the climate change agenda. <sup>27</sup> Adaptation only recently started to be incorporated in U.S. health and development programs, humanitarian aid, and diplomatic engagements. Yet as climate adaptation has slowly gained greater recognition as a U.S. foreign policy interest, the domestic politics of climate change and foreign assistance have become more polarized. <sup>28</sup>

The United States began addressing climate change under President Ronald Reagan, who ratified the Montreal Protocol on the depletion of the ozone layer and supported the creation of the UN IPCC. <sup>29</sup> President George H.W. Bush negotiated the UNFCCC. <sup>30</sup> His State Department issued a policy paper that observed that, if predictions about climate change came true, the "consequences for every nation and every aspect of human activity will be profound." Washington, the paper argued, could "strengthen U.S. influence and authority by taking the lead on minimizing those consequences." <sup>31</sup> President Bill Clinton signed the Kyoto Protocol nine years later—an international treaty committing "industrialized countries to reduce [greenhouse gas emissions]"—but never sought Senate ratification for the polarizing agreement. <sup>32</sup> His administration listed climate change as one factor spurring the pathogenic dangers that threaten U.S. national interests. <sup>33</sup> President George W. Bush, for his part, dramatically elevated U.S. investments in development and global health, which did not focus on climate per se, but created capabilities that could later prove useful for adaptation.

President Barack Obama was the first to systematically integrate climate adaptation with health policy. His administration deepened the national security focus on climate change, negotiating the Paris Agreement and increasing climate financing for low- and middle-income countries. Obama ordered federal departments to prepare for climate change and directed development agencies to integrate adaptation into their aid programs. <sup>34</sup> Critics, however, attacked Obama's integration of climate objectives into U.S. development initiatives, arguing that "economically damaging green policies" undermined existing aid programs. <sup>35</sup> Domestic political fault lines on climate change also began to sharpen and threaten foreign policy on both health and development issues.

Donald Trump won the 2016 election promising an America First foreign policy and the promotion of fossil fuel sources as part of a broader strategy of energy independence.<sup>36</sup> Once in office, he withdrew from the Paris Agreement and halted contributions to the Green Climate Fund, which helps developing economies pursue climate adaptation.<sup>37</sup> He did not end USAID programmatic support for climate resilience and adaptation, although little of that funding at that time targeted health directly.<sup>38</sup> In 2020, a Trump official wrote to the Government Accountability Office that USAID "remains committed to our programming on climate risk management (CRM) and climate adaptation."<sup>39</sup>

President Joe Biden expanded upon U.S. global health and climate adaptation efforts, developing the President's Emergency Plan for Adaptation and Resilience (PREPARE) as the "cornerstone of the U.S.

foreign policy response" to climate change and securing \$2.3 billion from Congress and mobilizing over \$3 billion in private funding to work with 115 countries.<sup>40</sup> PREPARE notably did not target infectious disease threats to vital U.S. interests—an issue left to separate U.S. global health security policies.<sup>41</sup> The connection between adaptation and health was clearest in development and global health policies addressing economic, food, health, and water issues in low-income settings.

President Trump's return to the White House in 2025, however, has effectively shut down U.S. foreign policy efforts on both climate mitigation and adaptation. The president withdrew the United States from the Paris Agreement again and sharply reduced climate funding for research at home and abroad. His administration has doubled down on fossil-fuel production, although the United States is already the world's leading producer of crude oil and natural gas. Cuts to climate monitoring programs at the National Oceanic and Atmospheric Administration and NASA threaten the ability of researchers and officials worldwide to track extreme weather, ocean, and coastal conditions. U.S. support for climate adaptation as a critical component of global health appears to have fallen by the wayside with the effective closure of USAID.<sup>42</sup>

# U.S. Foreign Policy on Climate Adaptation and Health Begins at Home

A country paralyzed by internal divisions is in no condition to help shape international preparedness and response to the infectious disease and climate change challenges that could define this century. The U.S. government cannot achieve consensus on whether climate change is real, let alone how it threatens U.S. national interests. <sup>43</sup> The bipartisan support that once existed on international development and global public health has unraveled during the second Trump administration. <sup>44</sup> U.S. policy on climate adaptation and global health has become inherently unstable, dependent on who controls the White House and thus easily reversed every four years.

If the United States is ever going to lead on confronting the adaptation crisis in global health, supporters of that agenda need to build a more lasting consensus at home, where climate change ranked low among the concerns of U.S. voters in the 2024 presidential election. <sup>45</sup> That effort begins by ensuring U.S. climate adaptation priorities in global health are aligned with today's foreign policy and national security concerns, and that they focus on proven interventions. Advocates for broader, more robust U.S. investments in health-related climate adaptation will need to keep the issue alive in domestic policy debates and patiently build support among like-minded communities that have emerged at the state, local, and international level.

# Hierarchy of U.S. Interests and Policy Responses on Climate Adaptation in Global Health

U.S. interests in increased international health cooperation on climate adaptation can be viewed as a three-tiered hierarchy, ranging from immediate- and potentially high-consequence threats to U.S. national security interests, to potential indirect effects on Americans' health and wellbeing, to advancing U.S values and diplomatic interests in mitigating humanitarian and economic crises in allies and trading partners.

# TIER 1: IMMEDIATE- AND HIGH-CONSEQUENCE THREATS TO NATIONAL SECURITY

In this first tier are clear national security interests in preventing dangerous emerging pathogens from entering the United States or affecting Americans around the world, including the U.S. military. The past six presidential administrations, including the current Trump administration, have all asserted that protection from pandemics is a vital U.S. national security interest—defined as "conditions that are strictly necessary to safeguard and enhance Americans' survival and well-being in a free and secure nation."<sup>46</sup> The CDC estimates that COVID-19 has killed at least 1.2 million Americans and imposed trillions in economic losses.<sup>47</sup> The next deadly novel respiratory virus could do worse. There is little scientific dispute that climate-associated shifts in land use have increased potential for viral sharing and zoonotic spillover in areas such as tropical forests with previously geographically isolated species of wildlife, such as bats, rodents, and other mammals.<sup>48</sup>

Nevertheless, a political divide has emerged over interventions for preparing and responding to emerging pathogens. President Trump asserted in the aftermath of COVID-19 that pandemic preparedness "is a very expensive solution... that won't work," with health emergencies better solved by "moving quickly when you see it happening."<sup>49</sup> His administration has terminated its support for the development of next-generation flu vaccines over political concerns regarding the mRNA platform, but has not yet cut off funding for the rapid development of other vaccine platforms, point-of-care diagnostics, and other technologies needed to respond to outbreaks of pandemic potential.<sup>50</sup> The U.S. government should focus its efforts on those critical public health measures that the private market is otherwise unlikely to fund on its own.<sup>51</sup>

The surveillance, diagnostic tools, and countermeasures needed to detect and respond to those emerging and reemerging pathogens will be similar regardless of their origins. Collaboration between the United States, allies, and vaccine and diagnostic developers on those tools can help enable local actors to manage dangerous climate-related health crises where they start. Priorities for U.S. investment in those areas include novel zoonotic threats as well as existing pathogens, such as Lassa fever, Marburg virus, and Rift Valley fever, where the rapidly changing climate is spurring outbreaks. Effective diagnostics are also lacking for invasive fungal infections and antimicrobial resistance from otherwise

common bacterial infections, which evidence suggests are becoming more common with the changing climate.  $^{52}$ 

Another area for first-tier U.S. investments is climate-informed public health surveillance and early response systems globally in order to anticipate and identify outbreaks as they start and to shape the response to climate-related disease outbreaks.<sup>53</sup> The United States has an opportunity to leverage its prowess in artificial intelligence (AI) to analyze satellite data to improve early warnings about climate events. <sup>54</sup> For instance, AI-enabled climate-informed public health surveillance could help integrate meteorological data on rainfall, temperature, and humidity, satellite imagery that tracks flooding or wildlife migration, and disease incident reports to help anticipate vector-borne disease outbreaks.<sup>55</sup> This work can also accelerate the development of better forecasting models that integrate health into research on climate impacts. That should include engaging the military and intelligence communities which have for several years actively explored the intersection of climate, security, and health.

# TIER 2: INDIRECT CLIMATE THREATS TO U.S. ECONOMIC AND POLITICAL INTERESTS

The second tier of U.S. vital interests is mitigating climate-related health crises that may not pose an immediate threat to U.S. national security, but could undermine U.S. economic and political interests. This category of threats includes climate-driven outbreaks of known diseases, such as chikungunya, cholera, dengue fever, Lyme disease, and malaria. <sup>56</sup> It also includes natural disasters and extreme weather events that cause food insecurity, displacement, and mass migration and their associated health and humanitarian risks. Floods, wildfires, droughts, and earthquakes forced an estimated forty-five million people to leave their homes in 2024. <sup>57</sup> The Trump administration's recent America First Global Health Strategy asserts that U.S. health foreign assistance that stabilizes and promotes economic development in recipient nations advances U.S. national security, by reducing the threats that could have otherwise accompanied that instability. <sup>58</sup>

Building on the same theme of investments in tools and technologies to enable local responses, U.S. support for improving weather forecasts and early warning systems can help reduce humanity's vulnerability to storms, floods, earthquakes, and other hazards, even amid a growing number of such weather-related disasters.<sup>59</sup> Early, accurate weather and disaster warnings are especially important to protect already vulnerable populations—children, the elderly, and the poor—who may not otherwise have access to clean water, air conditioning, or the resources to withstand supply shocks to energy or food prices. Likewise, those early warnings can help mitigate disruption to supply chains, treatment, and immunization capabilities for infectious diseases that are not designed for extreme heat, drought, flooding, infrastructure damage, and population displacement.

That level of climate-health preparedness depends on robust meteorological data, satellite monitoring of climate shifts, climate-specific health risk assessments of vulnerable populations, and transparent, accurate, and science-based public communication. Eliminating any of these components will make disasters deadlier, delay recovery, and worsen health inequities. Yet continued U.S. support for many of those functions is uncertain.<sup>60</sup>

#### TIER 3: OPPORTUNITIES TO ADVANCE U.S. VALUES AND SOFT POWER

The potential to generate soft power—the ability of a government to advance its interests by attraction rather than coercion or payment—through international health cooperation should be considered the third tier of a U.S. foreign policy strategy on climate adaption in global health.<sup>61</sup> Investments in this area are more likely to advance U.S. interests if they are informed by local priorities and are consistent with other U.S. engagement in the country or region.

This will likely vary by region. In 2024, climate change ranked among the concerns of voters in India, Indonesia, and many countries in Latin America. <sup>62</sup> Public awareness of climate change is lower in many parts of Africa, where concerns about jobs and the economy dominate at the polls. <sup>63</sup> In addition to its health benefits, effective soft power initiatives offering climate adaptation in global health can promote a favorable geopolitical alignment with the United States, countering the influence of strategic competitors such as China and Russia.

A package of soft power initiatives in this space could involve both longer-term and targeted public and private investments. Shared public investments and mutually beneficial initiatives can help interested countries and regions create the effective demand for climate-resilient health systems and workforce training, drought-resistant crops, or tools for water and sanitation management in flood-prone areas. In doing so, U.S. support can have the additional benefit of helping provide important market access for U.S. companies on health-related climate adaptation projects. A recent Boston Consulting Group analysis estimated the global market for climate resilience and adaptation will reach \$1.3 trillion by 2030, with emergency medical products and services, climate-adapted agricultural inputs, and water resilience representing some of the fastest segments .<sup>64</sup> U.S. investments in long-term resilience and adaptation should be coupled with shorter term, high-impact and high-visibility U.S. support for responding to natural disasters or localized infectious disease outbreaks.

#### Conclusion

The global health risks of climate change can be managed but not stopped or solved. Policymakers and funders supportive of this agenda should emphasize practical, achievable objectives for adaptation and resilience at national and local levels, and the essential role of international cooperation in satisfying them.

In the United States, that approach means highlighting the concrete and current consequences of climate adaptation inaction including the rising costs to food security, healthcare, and housing due to hotter temperatures. Communicating that could require pursuing nonpartisan coalitions of governors, mayors, corporations, and universities on climate adaptation concerns.<sup>65</sup> It should also involve building new bridges to affected groups such as farmers, whose crops will not grow because the soil is too hot, and local community organizations, whose facilities and activities are at risk from the health-related harms of flooding and other storm surges. Greater collaboration on climate adaptation and health is possible through subnational initiatives and networks, as already occurs among cities around the world.<sup>66</sup>

In the meantime, supporters of a greater U.S. agenda for climate adaptation should pursue their cause in Congress and among experts, nongovernmental organizations, think tanks, the private sector, development banks, and regional partners. Leaders of this effort on adaptation can take inspiration from more than a century of nongovernmental organizations, philanthropies, and public-private partnerships advancing sustainable energy technologies, improving health, mitigating armed conflict, promoting environmental conservation, and supporting the green revolution in food production. As the U.S. National Security Commission for Emerging Biotechnology promotes its recommendations to Congress and the U.S. public, for example, it should promote ways that biotechnology innovations can support agricultural and health adaptations to a warming world.

Both the House of Representatives and the Senate have bipartisan climate caucuses, including a Conservative Climate Caucus that focuses on free market solutions.<sup>69</sup> There is no reason why they cannot expand the dialogue to discuss adaptation, including global business opportunities for U.S. biotech companies and private sector concerns that Congress has sought to address, such as the problems that extreme weather is causing for the insurance industry.<sup>70</sup> Focused commissions and dedicated convenings have great potential to shape discourse and map strategies for the future. Idea generation does not need to stall. Indeed, it can—and should—accelerate.

International opportunities also exist to promote climate adaptation in global health. The recent World Health Assembly resolution on health and climate change and the introduction of a health-themed day at the UNFCCC in 2023 formally compel action. Smaller groups of like-minded nations could focus on specific aspects of the climate adaptation challenge and involve the governments and companies that matter most. In October 2024, for example, the African Union and the Caribbean Community agreed to strengthen cooperation on economic, social, and other issues.<sup>71</sup> Here, trade offers a model for going further: whereas global efforts have failed, regional and other small clusters have flourished in advancing concrete measures.<sup>72</sup> The recent advisory opinion of the International

Court of Justice that countries have legal obligations to combat the climate crisis and protect people and the environment from harm is unlikely to move U.S. policymakers, but could help mobilize international partners with shared interests.<sup>73</sup>

Despite the U.S. government's reticence, the International Finance Corporation continues to quietly support the strengthening of climate-resilient health systems. <sup>74</sup> The UNFCCC Conference of the Parties (COP30), to be hosted by Brazil in November 2025, should break new ground by creating an emergency adaptation plan that would take concrete steps (for example, support on health system resilience) in high-risk, low-income countries, and help derisk adaptation investments so as to crowd in other sources of private capital. <sup>75</sup> As the host of the Group of Twenty Summit in November 2025, South Africa has convened a working group on environmental and climate sustainability, which has identified financial and technical support for adaptation in the Global South as a summit outcome. <sup>76</sup>

Finally, it should be acknowledged that this approach to climate adaptation in global health in U.S. foreign policy would leave much on the table, especially for global audiences. Low- and middle-income countries have long sought international financial support for their significant climate adaptation needs considering the historical role of wealthy countries, such as the United States, in producing the overwhelming majority of emissions that spur warming global temperatures. Many high-income nations—including members of the Group of Seven and European Union—face economic problems, energy concerns, and national security threats that limit their ability to fill climate, development, and global health gaps that U.S. shifts have created. Geopolitical competition and changes in U.S. policy constrict what multilateral organizations, such as the United Nations and World Bank, can do to support adaptation projects. Falling short on climate financing and cutting U.S. aid programs is likely to further undermine global buy-in for achieving climate mitigation targets.

Yet rebuilding the case for climate adaptation and global health in U.S. foreign policy needs to start somewhere. For the next few years, other governments, intergovernmental mechanisms, nongovernmental actors, and researchers will have to lead responses to the adaptation challenge—until U.S. consensus is rebuilt and the government reengages with the threats that climate change poses domestically and around the world.

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