

Taking Action with Rising Heat: A review of current humanitarian protection against the impacts of dangerous heat in East African refugee contexts

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TAKING ACTION WITH RISING HEAT: A REVIEW OF CURRENT HUMANITARIAN PROTECTION AGAINST THE IMPACTS OF DANGEROUS HEAT IN EAST AFRICAN REFUGEE CONTEXTS

ABSTRACT

Dangerous heat events are the most deadly climate-related hazard. The East and Horn of Africa Great Lakes (EHAGL) region is one of the most vulnerable regions to dangerous heat and is also host to approximately 6.1 million refugees as of early 2026, making protection against dangerous impacts of heat a matter of international humanitarian importance. This article assesses the current state of humanitarian practice in developing, enabling, and introducing measures to decrease dangerous heat risk in EHAGL refugee contexts through a keyword-based search of 82 international and national policy and humanitarian frameworks. This research reveals a near total absence of high-level action on or intent to prevent and mitigate dangerous heat health disasters in refugee contexts despite high consensus on the urgency to do so. The results also reveal potential challenges to the adoption of policies aimed to protect against dangerous heat exposure. This article argues that action to protect against dangerous heat on a high-level can be achieved through integrating public health, heat mitigation measures, and refugee-population specific considerations into existing and future frameworks and policies, both directly and indirectly.

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INTRODUCTION

Nicknamed “the silent killer” (National Oceanic and Atmospheric Administration 2023), heat waves cause the greatest global rates of mortality of all extreme climate-related events (UN Secretary-General Climate Action Team 2024). Whereas extreme heat refers to surface temperature alone, the term “dangerous heat” describes the combination of air temperature, humidity, wind speed, built environment, and adaptive capacity that increase heat stress on the human body beyond which it can no longer regulate its own temperature. This results in increased susceptibility to dangerous health issues ranging from low-severity heat strain to fatal heat stroke (McGregor and Vanos 2018). Dangerous heat is currently estimated to cause 1.8 deaths per 100,000 people annually in East Africa (Potsdam Institute for Climate Impact Research, 2023), which is often thought to be underestimated and could be up to thirty times greater (USAID 2024) owing to poor medical documentation and inconsistent weather and climate monitoring (IFRC et al. 2022). The UNHCR-defined East and Horn of Africa Great Lakes (EHAGL) region,¹ hosting 6.1 million refugees collectively (UNHCR 2026a, b, c, d, e, f, g, h, i, j, k), has experienced rates of surface temperature rise greater than the global average (Intergovernmental Panel of Climate Change 2021) while being considered one of the most vulnerable regions to climate-related impacts (Republic of South Sudan Ministry of Environment and Forestry 2021; UNHCR 2023a).

Refugee populations in the EHAGL region are often hosted in areas that are projected to experience some of the most extreme rises in temperature, (UNHCR 2017; IFRC 2022)

¹ The East and Horn of Africa Great Lakes (EHAGL) region is composed of Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania, and Uganda.

exacerbating dangerous heat risk for refugees. Currently, the majority of refugee camps in the EHAGL region experience upwards of one hundred days above a dangerous heat threshold of forty-one degrees Celsius Wet-Bulb Globe Temperature (WBGT), a commonly used temperature metric that weighs temperatures with humidity and wind speed to reflect physiological impacts on body heat regulation. The top six current hottest refugee camps globally are located in Eritrea and Ethiopia. Climate change is projected to double the number of days above the dangerous heat threshold in 76% of global refugee sites by 2050, with the average site experiencing upwards of two months of dangerous temperatures (UNHCR 2024a)

Refugee populations are more vulnerable to the health impacts of heat than a reference population. Even the application of many widely accepted WBGT thresholds as an indicator of potential dangerous heat impacts in the EHAGL region can be problematic as the metric was developed using primarily white male young adults in peak health, which is not reflective of population demographics in this region (Meade et al. 2025) Refugee populations skew toward a higher proportion of children and elderly, (UNHCR 2024b) who are known to be more vulnerable to dangerous heat conditions (Kovats and Hajat 2007) and they may also suffer other physical and social vulnerabilities from armed conflicts (UNHCR 2024b) In addition, refugee populations often suffer from a restrictive lifestyle characterized by limited freedom of movement and autonomy (Zieck 2018), wherein they are often unable to move to a cooler location or access other mitigative measures such as wearing more heat-tolerant clothing or accessing electricity for cooling or water for hydration. Refugees are often socially and economically isolated from nationals in host countries (UNHCR 2022), impacting their access to vital public health resources and other essential services, severely limiting their capacity to cope

with heat (IFRC et al. 2022). Refugee settlements and camps also are often densely populated that regularly lack proper infrastructure, facilities, and greenspaces to properly mitigate dangerous heat (IFRC et al. 2022). To a similar end, humanitarian funding and resources are limited, (UNHCR 2025b; Maina 2025) so all organizations must prioritize where their efforts are most effective and needed.

This desk-based policy research serves to assess the current state of policies on developing, enabling, and introducing measures to decrease dangerous heat risk in EHAGL refugee contexts. A review of policy and program reports related to the impacts of dangerous heat on refugee health was conducted by assessing policy, framework, and humanitarian guidance documents from six of the most prominent international humanitarian organizations active in refugee contexts – the Danish Refugee Council (DRC), the International Federation of Red Cross and Red Crescent Societies (IFRC), Médecins Sans Frontières (MSF), otherwise known as Doctors Without Borders, the Norwegian Refugee Council (NRC), the United Nations High Commissioner for Refugees (UNHCR), and the United States Agency for International Development (USAID) – and all eleven EHAGL countries. The analysis reveals that most organizations are aware of and aspire to address the rising risks of heat on human health yet fall short of implementing sufficient active interventions to mitigate dangerous heat risks in refugee settings. The results emphasize a sizable gap in refugee policy that needs to be urgently addressed.

Background

The Science of Dangerous Heat

Extreme heat becomes dangerous to human health by increasing heat stress on the human body (McGregor and Vanos 2018). The human heat balance (HHB) equation describes the relationships and responses between heat and the body, which refers to the combination of external, environmentally-driven and internal, metabolically-generated heat. Heat is transferred to the body by conduction, convection, and radiation, and shed principally through evaporation (McGregor and Vanos 2018). Dangerous heat occurs when air temperature, radiation load, humidity, and low wind speed combine to suppress evaporative loss, leaving the body unable to regulate its core temperature. Risks are also influenced by personal heat tolerance, which is an individual's ability to mitigate heat through their metabolism, behaviors, and living conditions (Mora et al. 2017). A widely accepted threshold for heat that interferes with the regulation of body temperature is 31 degrees Celsius WBGT which increases the chance of a range of heat-related illnesses, from low-severity heat strain to fatal heat stroke, however there are a number of thresholds that are commonly used (Lin et al. 2025). The youngest and oldest populations, those with pre-existing health conditions, and groups that do not have access to cooling systems, healthcare, and other essential services are the most susceptible to the dangers of heat, including refugees (Kovats and Hajat 2007).

Review of International and Regional Treaties Safeguarding Refugee Protection

Refugee protection in East Africa is provisioned through international and regional legal frameworks. Three of the most foundational frameworks include the 1951 Convention Relating to the Status of Refugees and its 1967 Protocol, the 1969 OAU Convention on Governing the Specific Aspects of Refugee Problems in Africa, and the 2018 Global Compact on Refugees. These documents establish the baseline of how refugees are protected, outline the minimum standards of refugee treatment, and identify what institutions are responsible for providing refugee protection. These conventions and compacts do not address dangerous heat nor any other climate-related risks but are essential context for potentially designing new policies meant to protect refugees against the human health impacts of dangerous heat.

The 1951 Convention Relating to the Status of Refugees and its 1967 Protocol is the international refugee law adopted post-World War II that establishes the minimum standards of refugee welfare provisioning and rights. The 1951 Convention defines how an individual qualifies for refugee status and protection as those fleeing their country of origin due to a well-founded fear of persecution, and the 1967 Protocol precludes the geographic and temporal limitations of the original refugee definition. Chapter IV of the Convention outlines guidelines for welfare services and protection provided by non-governmental organizations, facilitated by governments and inter-governmental organizations, including access to suitable housing, public education, public relief, and other social services (UN 1951). This chapter ensures that refugee populations have the right to the same public relief nationals receive, which could extend into how human health impacts of heat are addressed.

Building from the 1951 Convention, the 1969 Organization of African Unity (OAU) Convention on Governing the Specific Aspects of Refugee Problems in Africa is the regional agreement in Africa that defines refugee status and protection. The 1969 OAU Convention expands the definition for refugee status qualification to include those fleeing their country of origin due to external aggression, occupation, or other events impacting their security. This amendment allows for those displaced by violence, including armed conflict, to find protection as a refugee, even if the individual is not fleeing persecution due to their identity. The OAU made no changes to how these populations are treated, thus the 1951 Convention and 1967 Protocol determines common standards for refugee protection in Africa. Eight of the eleven EHAGL countries have ratified the 1969 OAU Convention (OAU 1969); Djibouti, Eritrea, and Somalia are signatories but have not deposited instruments of ratification.

The 2018 Global Compact on Refugees is one of the latest additions to the array of international treaties governing refugee affairs, and it aims to improve protection and assistance by capitalizing on mechanisms to share burden and responsibility of refugee care. The legal framework outlines various accessible approaches to alleviate burden on host countries and improve self-reliance of refugees. This includes an Asylum Capacity Support Group established to more effectively assess and deliver protection aligned with international and regional legal commitments with the goal to minimize protection gaps. Notably, the Compact indicates in contexts of forced climate displacement and dangerous weather conditions that assistance will be provided by stakeholders with appropriate and relevant experience with consideration towards existing national legislation and organizations (UNHCR 2018).

Methodology

A keyword-based review of eighty-two documents sourced from six international humanitarian organizations and the eleven EHAGL countries was conducted to understand (1) organizational engagement with dangerous heat risks in public-facing policy papers and briefs, reporting and other documents and (2) common themes that underlie the development of broader national climate change frameworks to illustrate prioritization of concerns.

The six international humanitarian organizations were selected based on their involvement with refugee protection and/or refugee health initiatives globally: DRC, IFRC, MSF, the NRC, UNHCR, and USAID. These organizations each have a focused mission to serve and protect refugee rights and health, constituting their inclusion. One document from USAID presented in this report is no longer publicly accessible due to the organization's dissolution mid-2025, however the analysis of their prior engagement is still included here given the quantity of relevant USAID documentation on refugee protections and their enduring influence on international policy.

This study included countries enumerated in the UNHCR definition of the EHAGL region. Policy documents that focused on refugee or environmental protection in a given country were analyzed. The UNHCR Refugee Policy Review Framework (RPRF) documents published for each EHAGL country in 2024 were also utilized to identify national policy, laws, and frameworks and examine the ways in which refugees are considered in environmental and public health legislation.

Between February 2024 and January 2025, documents that guide humanitarian action (e.g., grey literature, policy papers, plans and frameworks) were sourced from the humanitarian organizations’ respective publication databases (see Table 1) using the following keywords: “extreme heat”, “heat”, “climate change”, “environment”, and “green(ing)”. National policy and plan documents and policy review were procured through conducting Google searches for “[country] asylum policy” or “[country] refugee policy” for each of the eleven countries. Document relevancy was first assessed by considering whether the title suggested that the document may be relevant for understanding the impact of dangerous heat on refugee health or climate change in refugee settings more broadly. Within relevant articles, a keyword search was conducted using the same set of keywords above; documents containing relevant content were included in the analysis. If these resources were only available in a language other than English, the document was run through the DeepL translator tool.²

Table 1. Humanitarian publication databases used and the number of relevant documents.

Organization	Count	Databases
Danish Refugee Council (DRC)	3	DRC Documents Resource ³
International Federation of	5	IFRC Documents Resource ⁴

² www.deepl.com

³ <https://drc.ngo/resources/documents>

⁴ <https://www.ifrc.org/documents/all>

Table 1. Humanitarian publication databases used and the number of relevant documents.

Red Cross and Red Crescent Societies (IFRC)		
Médecins Sans Frontières (MSF)	5	MSF Science Portal ⁵ LuxOR: MSF's Operational Research Unit in Luxembourg ⁶
Norwegian Refugee Council (NRC)	3	NRC Publications Resource ⁷
United Nations High Commissioner for Refugees (UNHCR)	8	UNHCR Reports and Publications Resource ⁸ Refworld - UNHCR's Global Law and Policy Database ⁹
United States Agency for International Development (USAID)	3	USAID Reports and Publications Resource ¹⁰

Thirty-four documents from the six international humanitarian organizations and eighty-five documents from the eleven countries were identified as potentially relevant through title review. Out of the combined one hundred nineteen documents, twenty-seven for the humanitarian

⁵ <https://scienceportal.msf.org>

⁶ <https://msf.lu/en/luxor>

⁷ <https://www.nrc.no/search>

⁸ <https://www.unhcr.org/what-we-do/data-and-publications/reports-and-publications>

⁹ <https://www.refworld.org>

¹⁰ <https://www.usaid.gov>. The USAID Reports and Publication resource is not publicly accessible at time of writing.

organizations (see Table 1) and fifty-five for the countries (see Figure 1) were included for further analysis. Five of the country documents were translated into English using DeepL.



Figure 1. Distribution of analyzed documents by EHAGL country.

Each document was reviewed to identify whether and how organizations engage with or acknowledge dangerous heat risks for refugee populations. Document-specific assessments were then summarized for each organization and used to identify (1) organizational engagement with

dangerous heat risks in public-facing policy papers and briefs, reporting and other documents and (2) common themes that underlie the development of broader climate change frameworks to illustrate prioritization of concerns. Connections were drawn between these summaries to form the results. The scope of this analysis focuses on the broadest levels of humanitarian documentation with no representation of local policies. Therefore, collaborator engagement driven by facilitating organizations such as international organizations and national governments, whether that be financially, materially or through guidance, could not have been captured.

Table 2 defines the levels of engagement with dangerous heat considerations in policy that were developed through analyzing how heat is (or is not) addressed in organizational documentation. These definitions were built iteratively as results were beginning to be formed to help finalize conclusions. Quotes that best represent an organization’s engagement with these resulting connections were selected to better contextualize the results.

Table 2. Dangerous heat engagement definitions used to differentiate how each organization approached the concern.

Level of Engagement	Definition
Active	The organization has implemented operational programs that directly address dangerous heat risks.
Aspirational	The organization provided a statement of urgency to address health impacts of dangerous heat, in general, but provides no evidence of actionable commitments or

Table 2. Dangerous heat engagement definitions used to differentiate how each organization approached the concern.

	operational activities. The acknowledgement of the risks of dangerous heat is not translated into policy or programs.
Absent	The organization may follow an institutional climate change policy or framework and acknowledge rising temperatures and frequency of dangerous heat, but they do not specifically acknowledge how dangerous heat impacts human health.

Results

Active operational engagement with dangerous heat in humanitarian solutions and policy is lacking

This analysis revealed that the IFRC is the only national or international organization that exhibited evidence of implemented action which reported heat impact mitigation programs in refugee camps in 2022. The IFRC directly advised for more aggressive investments towards mitigating and adapting to the consequences of dangerous heat by supporting national policy reforms and implementing heat programs, identifying refugees as a priority population of concern (IFRC et al. 2022). They have assisted in reframing national climate change adaptation plans (NAPs) and early action protocols to incorporate heat risks in Malawi, Australia, Fiji, Samoa, Kyrgyzstan, Tajikistan, and Vietnam (IFRC 2021; IFRC et al. 2022; IFRC 2022; IFRC

2023) In 2023, the organization reached 2.5 million individuals (not only refugees) through their heatwave risk reduction program, (IFRC 2024) demonstrating their commitments to heat action through programs that directly influence individuals' resilience. This particular program focused on increasing public awareness of risk and mitigation strategies, heat-resilient shelter planning, establishment of cooling centers, and more accessible aid delivery and adaptation to cash-for-work programs (IFRC et al. 2022; IFRC 2024) Most notably, some of these actions have been introduced into refugee camp settings, such as these programs described on page 25 of the IFRC's 2022 document *Extreme Heat: Preparing for the Heat Waves of the Future*:

“Adaptations to humanitarian programming in camps have been rolled out in some camp environments and deserve further expansion. They include establishing cool elderly care centres, using thermally appropriate shelters, and adapting service delivery and cash-for-work programmes to increasing heat stress.”

The next steps to improving IFRC dangerous heat refugee programs involve promoting greater collaboration with camp managers, integrating successful urban mitigation strategies, encouraging early warning and anticipatory action strategy adoption, and increasing policy advocacy (IFRC et al. 2022; IFRC 2023). Beyond these brief statements, no further information could be gathered about programs implemented into refugee contexts, and the IFRC's annual target for their heatwave risk reduction, preparedness, and response programs in 2023 reached 5% of their annual target population of fifty million people (IFRC2024).

It is also plausible that the lack of public-facing documentation on active dangerous heat programs is a product of humanitarian organizations' roles as facilitating, governing agencies rather than acting organizations. The documents analyzed often emphasized the organizations' role as a facilitator, providing the financial, political, and material means of enacting change and keeping guidance fairly open-ended as exhibited by UNHCR's role in promoting climate resilience. It is possible that these organizations' engagement with dangerous heat is hidden within their collaborations with local partners and collaborators that carry out the recommendations of international humanitarian organizations that facilitate change through resource and funding mechanisms.

The majority of organizations recognize dangerous heat as a concern aspirationally

As Table 3 demonstrates, beyond the active commitments of the IFRC, three of the six international humanitarian organizations, the USAID, MSF, and UNHCR, identify dangerous heat as a program and policy priority, understanding that “high temperatures can ... adversely impact livelihoods and survival, contributing to increased humanitarian need for people already highly vulnerable.” (USAID 2024, p. 8) These organizations stated that heat considerations, mitigation, and adaptation efforts “can and should” be integrated into organizational strategies, programs, and systems to meet the growing risks of dangerous heat (USAID 2019, 2024; MSF 2020a, b; IFRC et al. 2022, p. 77; MSF 2023) MSF further acknowledged health impacts of dangerous heat as a primary concern that “demand[s] an urgent response” (MSF and Lancet Countdown: Tracking Progress on Health and Climate Change 2019, p. 3) by local humanitarian actors.

“Local authorities, governments and other humanitarian actors need to better understand the implications of climate change for urban migration and adapt operationally in order to properly address the resultant health impacts from extreme heat, pollution, water contamination, overcrowding, undernutrition, and exclusion from healthcare.” (MSF and Lancet Countdown: Tracking Progress on Health and Climate Change 2019, p. 17)

The USAID suggested promoting nature-based heat mitigation and adaptation measures within refugee contexts.

“[Considering the effects of dangerous heat on humanitarian assistance] includes working across sectors and clusters to integrate climate-smart, nature-based solutions at landscape scales (e.g., watersheds) within refugee, internally displaced persons and other humanitarian settlement contexts, to support: reducing heat islands; reducing risks to other natural hazards; mitigating heat-related displacement and conflict; proactively anticipating and responding to reduced access to water, sanitation and hygiene, education and livelihoods, related to long-term temperature stresses; and the heatwave shocks that impact these populations.” (USAID 2024, pp. 8–9)

UNHCR acknowledged growing risks of heat-related mortality in refugee settings, determining that “most refugee settlements and camps [are] projected to experience twice as many days of dangerous heat by 2050” (UNHCR 2024a, p. 7) and spearheading the Sahel Predictive Analytics project in 2022, an interagency comprehensive review of interactions between climate change,

conflict, and displacement using predictive models to build recommendations for action (United Nations Office of the Special Coordinator for Development in the Sahel and UNHCR 2022)

Table 3. Summary of international humanitarian organization engagement with dangerous heat considerations in refugee contexts.

Organization	Assessed Engagement Level	Assessment Summary of Engagement
International Federation of Red Cross and Red Crescent Societies (IFRC)	Active	Targeted programs in refugee settings were identified, but further impact reports or assessments could not be found about the nature or success of these activities (IFRC et al. 2022, p. 25; IFRC 2024, pp. 108, 199)
Médecins Sans Frontières (MSF)	Aspirational	Dangerous heat is directly acknowledged as a human health threat that necessitates adaptations to humanitarian healthcare delivery to address heat illnesses and other health implications, however no evidence of active programs could be identified (MSF and Lancet Countdown: Tracking Progress on Health and Climate Change 2019, p. 17; MSF 2020a, p. 36)
United States Agency for International Development (USAID)	Aspirational	The USAID recognized the development of heat early warning systems (HEWS) and heat-health action plans (HHAP) would be important to confronting heat-health concerns of broad populations, but no evidence of such plans could be identified (USAID 2019, 2024, pp. 8–9)

Table 3. Summary of international humanitarian organization engagement with dangerous heat considerations in refugee contexts.

Organization	Assessed Engagement Level	Assessment Summary of Engagement
United Nations High Commissioner for Refugees (UNHCR)	Aspirational	Dangerous heat is identified as a concern in refugee contexts, with recommendations to improve data availability and quality through inter-agency and national collaboration, integrate evidence-based climate action within local and national governing practices, and invest in context specific adaptation and capacity building (United Nations Office of the Special Coordinator for Development in the Sahel and UNHCR 2022; UNHCR 2024a)
Danish Refugee Council (DRC)	Absent	Extreme or dangerous heat is not a targeted concern, however the DRC is aware of impacts of increased heat in regions they operate in (DRC 2021, p. 14, 2023, p. 11)
Norwegian Refugee Council (NRC)	Absent	None of the 51 climate action NRC missions in 2023 emphasized dangerous heat as a primary driver of intervention (NRC 2024, pp. 17, 28, 30)

It was found that nine of the eleven countries, all but Djibouti and Rwanda, attribute prolonged dangerous heat events as a cause of increased severity and occurrence of serious health trends, as illustrated in Table 4. Beyond heat illnesses, other health concerns such as heat-related deaths, injury (e.g., workplace-related, sunburn), and increasing water- and vector-borne disease incidence and expanding spread were highlighted as specific health concerns in various reports (Republic of Uganda 2007; State of Eritrea Ministry of Land, Water, and Environment and

Department of Environment 2007; United Republic of Tanzania Vice President's Office, Division of Environment 2007; Federal Republic of Somalia Ministry of Natural Resources 2013; Republic of Sudan Ministry of Environment, Natural Resources and Physical Development 2016; Federal Democratic Republic of Ethiopia 2019a; Federal Republic of Somalia 2020; United Nations Environmental Programme and Sudan Higher Council for Environment and Natural Resources 2020; Republic of South Sudan Ministry of Environment and Forestry 2021; United Republic of Tanzania 2021; Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023; Republic of Burundi Ministry of the Environment, Agriculture and Livestock 2023) Many countries integrated heat-health concerns within national climate change policy, such as Kenya's 2023 Third National Climate Change Action Plan (NCCAP III) which identifies heat stress as a primary climate-related hazard, especially for population groups living in informal settlements reliant on natural resources (which does not explicitly include all refugee populations), women, children, and the elderly (Federal Republic of Somalia 2020; Republic of South Sudan Ministry of Environment and Forestry 2021; Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023)

“In Kenya, climate change manifests through various environmental hazards, particularly floods, droughts, and heat stress caused by rising temperatures ... Projected changes in climate threaten the progress made in the health sector ... Moreover, the incidence and seasonality of other critical stressors to which children are vulnerable, such as heat stress, ... are expected to rise.” (Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023, p. 29)

Somalia's 2020 National Climate Change Policy expanded on NCCAP III's list of vulnerable groups to include those working in outdoor trades and are exposed to environmental elements.

“The rise in global temperatures caused by climate change will also make the phenomenon of 'heat stress' more common. Heat stress endangers the safety of workers and reduces their productivity, especially for workers in agriculture and construction sectors and laborers.” (Federal Republic of Somalia 2020, p. 42)

Most countries identified refugee-targeted policy solutions though often placing responsibility on refugee populations

Eight of the eleven EHAGL countries, including Burundi, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania, and Uganda, specifically identified refugee-targeted policy solutions through promotion of sustainable environmental management and screening, settlement development, and deliberate integration of refugee considerations into existing national systems (United Republic of Tanzania Ministry of Home Affairs 2003; Republic of Uganda 2006; State of Eritrea Ministry of Land, Water, and Environment and Department of Environment 2007; Republic of South Sudan 2013; Republic of Rwanda 2016; Federal Democratic Republic of Ethiopia 2019, b; Republic of Kenya 2020, 2021; Republic of Uganda Office of the Prime Minister 2022; Republic of Burundi and International Organization for Migration 2024; UNHCR and WorldBank 2024a, b; UNHCR 2025c) Eritrea's 2007 National Adaptation Programme of Action (NAPA) was one of the only documents that promoted autonomous coping strategies and refugee settlement-specific strategies to increase resiliency to heat (State of Eritrea Ministry of Land, Water, and Environment and Department of Environment 2007, p. 28) However, these

strategies often place the burden and responsibility of driving change in the hands of refugee households, for example planting trees for shade and upkeeping camp sanitation and cleanliness, posing a separate ethical dilemma of who bears the responsibility and accountability for developing, promoting, and integrating dangerous heat protection measures. This placement of responsibility on refugee populations can be seen through Ethiopia's 2019 Refugees Proclamation and Rwanda's 2016 Ministerial Instructions Determining the Management of Refugees and Refugee Camps.

“Every recognized refugee and asylum seeker shall have the duty to protect the environment.” (Federal Democratic Republic of Ethiopia 2019c, p. 22)

“Article 22: Environmental protection. In all refugee camps, refugees participate in all activities meant to protect the environment such as: planting and protecting trees; establishing drainage systems; leveling or covering pit holds inside refugee camps to prevent eventual accidents.” (Republic of Rwanda 2016, pp. 18–19)

On the other hand, there are some examples of ambiguously-worded national climate change policy that might be extrapolated to include the protection of refugee populations despite not being named specifically. For example, Article 7 of Djibouti's 2009 Law on the Environment Code states that “everyone residing in the Republic of Djibouti has the right to a healthy environment guaranteed by the national and local authorities in charge of drawing up and implementing environmental policy ... [with aims of] promoting a healthy environment for improved health safety.” (Republic of Djibouti 2009, pp. 5–6) This could be interpreted so that

refugee populations also have this right, however none of the documents sourced for Djibouti made any mention of policy that targets improving environmental health for the benefit of refugees in specific. Other examples include Article 41 South Sudan's Transitional Constitution which determined that "every person or community shall have the right to a clean and healthy environment", (Republic of South Sudan 2011, p. 13) with similar rights in the Somalian Provisional Constitution (Federal Republic of Somalia Ministry of Natural Resources 2013)

General protection and healthcare afforded to refugees among all countries dominantly follow international refugee treaties

All but two of the countries have committed to providing protection and adequate, necessary services for development in refugee contexts (United Republic of Tanzania 1999; Republic of Uganda 2006; Republic of South Sudan 2012; Republic of Rwanda 2016; Republic of Djibouti 2017a; Federal Democratic Republic of Ethiopia 2019b; Republic of Burundi 2021; Republic of Kenya 2021). A refugee or asylum policy could not be found for Somalia or Eritrea. National refugee policy, in addition to protection measures, often dictated how refugees will receive healthcare, however many of the policies were either vague in how healthcare is provisioned by the national government (e.g., provisioning of 'essential services') or heavily relied on care provided by UNHCR and other international humanitarians (Republic of Kenya 2021). Five countries, Burundi, Djibouti, Ethiopia, South Sudan, and Uganda, explicitly grant refugees the same rights to healthcare as its nationals (Republic of Uganda 2006; Republic of South Sudan 2012; Republic of Djibouti 2017a; Federal Democratic Republic of Ethiopia 2019b; Republic of

Burundi 2021; UNHCR and WorldBank 2024a) With rising climate-related health risks, particularly in contexts of dangerous heat, the inclusion of refugees in healthcare and climate-related policies as a population particularly vulnerable to impacts of climate change will be critical to ensure their protection.

National climate change policies prioritize sectors of society that are seen as more critical, such as agriculture, livestock, and forestry, instead of dangerous heat risk

Many countries identified that their populations are heavily reliant on either subsistence or economic farming and forest products for energy and building materials. Thus, both agriculture and forestry are often considered in climate change policy to promote livelihood and economic longevity, with eleven and nine of the EHAGL countries listing these two priority sectors respectively (Republic of Rwanda Ministry of Lands, Environment, Forestry, Water, and Mines 2006; Republic of Uganda 2007; State of Eritrea Ministry of Land, Water, and Environment and Department of Environment 2007; United Republic of Tanzania Vice President's Office, Division of Environment 2007; Republic of South Sudan 2013; Federal Republic of Somalia Ministry of Natural Resources 2013; Republic of Sudan Ministry of Environment, Natural Resources and Physical Development 2016; Republic of Djibouti 2019; Federal Democratic Republic of Ethiopia 2019a; Republic of Kenya 2020; United Republic of Tanzania 2021; Federal Republic of Somalia Office of the Prime Minister 2022; Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023; Republic of Burundi Ministry of the Environment, Agriculture and Livestock 2023) The healthcare sector is prioritized in seven of the EHAGL countries, however, these policies do not directly address dangerous heat concerns.

National climate action policies address these sectoral priorities most often through measures to promote public awareness, environmental protection, and healthcare capacity building, as Figure 2 illustrates.

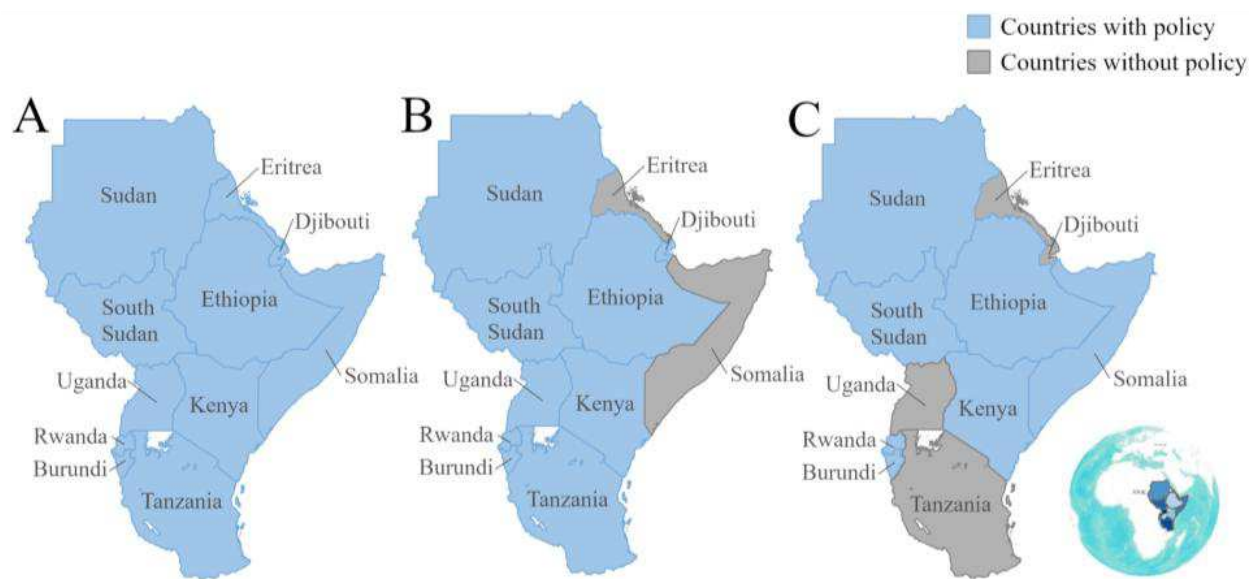


Figure 2. National policy priority trends by country where (A) represents public awareness policies, (B) represents environmental protection policies, and (C) healthcare capacity building.

All eleven EHAGL countries integrated early warning systems and public awareness into their general climate change policies, utilizing these programs to prevent detrimental impacts of climate change (United Republic of Tanzania 2004; Republic of Rwanda Ministry of Lands, Environment, Forestry, Water, and Mines 2006; Republic of Uganda 2007; United Republic of Tanzania Vice President’s Office, Division of Environment 2007; Federal Republic of Somalia Ministry of Natural Resources 2013; Republic of Kenya Ministry of Environment and Natural Resources 2016; Republic of Sudan Ministry of Environment, Natural Resources and Physical Development 2016; Federal Republic of Somalia, Ministry of Planning, Investment and

Economic Development, Ministry of Humanitarian Affairs & Disaster Management, Federal Member States, Benadir Regional Administration 2018; Republic of Djibouti 2019; Federal Democratic Republic of Ethiopia 2019a; Republic of Rwanda Ministry of Environment 2019; Federal Republic of Somalia, Ministry of Planning, Investment and Economic Development 2020; Federal Republic of Somalia 2020; Republic of South Sudan Ministry of Environment and Forestry 2021; United Republic of Tanzania 2021; Global Environmental Facility 2022; Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023; Republic of Burundi Ministry of the Environment, Agriculture and Livestock 2023; Republic of Burundi and International Organization for Migration 2024) Ethiopia's 2019 Climate Resilient Green Economy National Adaptation Plan (NAP) identified early warning system improvements as a priority adaptation option to proactively address climate-related health disaster impacts, including recommendations to serve rural and remote communities most vulnerable through extension systems like the radio.(Federal Democratic Republic of Ethiopia 2019a, p. 28) Kenya's 2015-2030 NAP prioritized building public awareness and social mobilization on the health impacts of climate change in particular to enhance climate resilience in their national health infrastructure (Republic of Kenya Ministry of Environment and Natural Resources 2016, p. 42).

Nine of the eleven countries emphasized the necessity of sustainable environmental management, restoration, diversified economic livelihoods, and green spaces in various environmental protection policies (United Republic of Tanzania Vice President's Office 1997; United Republic of Tanzania Ministry of Lands and Human Settlements Development 2000; Republic of Kenya 2003, 2006; Republic of Djibouti 2009; Republic of Kenya 2010; Republic of South Sudan 2013; Republic of Rwanda 2016, 2018; Federal Democratic Republic of Ethiopia

2019; Republic of Uganda 2019; Republic of Rwanda Ministry of Environment 2019; Republic of Uganda Ministry of Water and Environment 2019; Republic of Uganda National Planning Authority 2020; United Nations Environmental Programme and Sudan Higher Council for Environment and Natural Resources 2020; Republic of Uganda Office of the Prime Minister 2022; UNHCR and WorldBank 2024c) One of the only mentions of residential green spaces was in Article 46 of Djibouti's 2009 Law No. 51 on the Environment Code, establishing that areas used for human habitation must have green spaces at least equal to 5% of the total area in urban zones and 12% in rural zones." (Republic of Djibouti 2009, p. 10) Eritrea's 2007 NAPA approaches a similar adaptation priority with an initiative that encourages village households to allocate a portion of their marginal land to devote to afforestation and agroforestry (State of Eritrea Ministry of Land, Water, and Environment and Department of Environment 2007, p. 34)

Healthcare capacity building to prepare and respond to gradual and immediate climate-related health risks is identified as an adaptation and policy priority for seven of the eleven EHAGL countries (Republic of Burundi 2016; Republic of Kenya Ministry of Environment and Natural Resources 2016; Republic of Sudan Ministry of Environment, Natural Resources and Physical Development 2016; Federal Democratic Republic of Ethiopia 2019a; Republic of Rwanda Ministry of Environment 2019; Federal Republic of Somalia 2020; Republic of South Sudan Ministry of Environment and Forestry 2021; Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023; Republic of Burundi and International Organization for Migration 2024) Examples of how national governments aim to improve healthcare response to climate risks include making updated training accessible to local health personnel, boosting infrastructure proactively to respond to possible increase in climate refugees, (Republic of Sudan

Ministry of Environment, Natural Resources and Physical Development 2016) investing in national vulnerability and risk assessments to health impacts of climate change, (Republic of Kenya Ministry of Environment and Natural Resources 2016) and developing risk maps to identify priority areas to formulate localized preparedness and response plans (Republic of South Sudan Ministry of Environment and Forestry 2021).

Reducing reliance on humanitarian service delivery depends on collaboration, evidence, advocacy, and transparency

Collaborations allow international humanitarian organizations to coordinate, implement, and sustain initiatives that best serve the unique priorities of a specific community while “aim[ing] to support, rather than substitute, local responses.” (IFRC et al. 2022, p. 7) Organizations stressed that “responses should be embedded in and driven by the affected communities themselves”, (IFRC et al. 2022, p. 7) placing importance in working with refugees, camp managers, and host communities to support project sustainability (NRC 2012, 2021; USAID 2019, 2024; MSF 2020a; IFRC 2021; IFRC et al. 2022; UNHCR 2022; DRC 2023; MSF 2023)

In-house and academic research, in particular focused on vulnerability assessments, is essential to “inform risk management and communication of actionable recommendations, especially to the most vulnerable populations, for minimizing heat risks.” (USAID 2019, p. 4; MSF 2020a; UNHCR 2020; DRC 2021; Peters et al. 2021; IFRC et al. 2022; USAID and United States Department of State 2023; NRC 2024) Collaborations cultivated within the international aid, global health, and academic institution communities bridge data and knowledge gaps that are

particularly prevalent in the EHAGL region (MSF and Lancet Countdown: Tracking Progress on Health and Climate Change 2019; Peters et al. 2021; IFRC et al. 2022).

To address the active and anticipated impacts of climate change on vulnerable populations, organizations prioritize advocacy for new and improved people-centered policies on all institutional levels, strengthening existing laws and regulation and promoting action where it is lacking (MSF and Lancet Countdown: Tracking Progress on Health and Climate Change 2019; USAID 2019; DRC 2021; Peters et al. 2021; IFRC 2022; IFRC 2023; USAID and United States Department of State 2023; UNHCR 2023b, 2025a) Humanitarians “aim to act as a voice of displaced people with a focus on supporting and encouraging duty-bearers to protect displaced people’s rights.” (DRC 2021, p. 12) For example, Red Cross Societies in Australia, Fiji, Malawi, and Samoa have engaged as auxiliaries in the strengthening of national climate change adaptation policies (IFRC 2021, p. 18)

Transparent program reporting ensures the quality of initiatives “through documenting and publicly sharing the successes, challenges, and other details of their programs” (MSF 2020b, p. 27) and conveys commitments to accountability to the people organizations are serving through organizational learning (MSF 2020a, b; UNHCR 2020; DRC 2021, 2024; IFRC 2021; NRC 2021; IFRC 2022)

Funding is one of the limiting factors in the wide implementation of such programs, thus “ensur[ing] that the humanitarian impacts of climate change on displaced persons and host communities are both well understood and reflected upon in policy and practice including in

budgetary allocations and that climate financing is proportional to the challenge” (DRC 2021, p. 12) will be integral for humanitarian-aided resilience building (DRC 2021; IFRC 2021; USAID and United States Department of State 2023; UNHCR 2023b; United Nations News 2023; NRC 2024)

Discussion

This analysis provides six key findings that can be utilized to articulate and formulate future steps in improving active intervention to mitigate and adapt to dangerous heat risk of refugees in the EHAGL. There is a disconnect between the broad acknowledgement of the health risks of dangerous heat on refugee populations and the delivery of active solutions in practice and policy. Dangerous heat has been clearly defined as a public health issue, but the development and implementation of solutions has not reflected the same urgency presented by the risks. Existing humanitarian climate change-related interventions are rooted in the same concepts to enable collaborators to develop context-specific, adaptable initiatives built on research and policy advocacy, which could provide a template for how heat-related health risks can be approached moving forward. Additionally, although national climate change policies in the EHAGL tend to prioritize other impacted sectors that are seen as more critical, such as agriculture, livestock, and forestry, rather than the effects of dangerous heat on human health, these existing institutions and political frameworks could be utilized to mitigate dangerous heat indirectly. That said, refugee populations are explicitly integrated in national climate change policy in eight of the eleven countries in the region, and five of the countries provide refugees equal access to healthcare on

the same basis as nationals. Moving forward with dangerous heat policies targeting the protection of refugee populations in the EHAGL must address this gap.

The future of dangerous heat in refugee contexts and recommendations for protection actors

These results conclude that dangerous heat in refugee contexts becomes more dangerous with the inaction of protective actors despite opportunities for mitigation and adaptation. Refugee populations are made more vulnerable to dangerous heat by the current approach in humanitarian aid. For example, the trend of refugee camps and settlements being sited in regions that are more exposed to dangerous heat but lack preventative measures is driven by institutional decisions.

The slow uptake of mitigation and adaptation measures and inaction of protective actors, beyond just international and national organizations, are exacerbating the risks of dangerous heat in refugee contexts.

There are multidimensional opportunities for improved anticipatory and adaptive measures in response to dangerous heat that can be explored by humanitarian actors. At the highest levels, taking actions to prevent refugee exposure to heat, like adjusting camp siting requirements to avoid high heat exposure, is one method of minimizing dangerous risks of heat by removing the source of risk. In existing refugee settlements, mitigating the dangerous impacts of heat can take a variety of forms. From targeted greening campaigns and green area policy to providing improved shelters, cooling centers, health services, and other opportunities to gain access to cooling, actors across levels of governance and capacities have the ability to reduce exposure and vulnerabilities of refugee populations while improving adaptive capacities.

Although these opportunities are ample, so too are the limitations and challenges to developing and implementing action. Constraints potentially presented by infrastructural, organizational, and financial resources, limited reporting on successful dangerous heat program success influencing prioritization and urgency, indirect mitigating results of national climate change policies, and the role of organizations, international humanitarian organizations in particular, as facilitators rather than actors all could influence when and how action occurs in the humanitarian sphere.

Humanitarians face a daunting number of challenges to enact policies and programs aimed to improve the lives and health of refugee populations, including protection against dangerous heat. The findings of this review could be legacies of such obstacles, and the following suggestions and recommendations are not blind to the difficulties of humanitarian work.

With consideration to the financial, operational, and political limitations of the considered international and national organizations, the susceptibility and limited protections afforded to refugee populations against dangerous heat, and the continued, mounting urgency of mitigating and adapting to risks, active recommendations were formulated to promote the health and wellbeing of refugees in the EHAGL region.

For international humanitarian organizations:

- **Emphasize dangerous heat interventions in existing local collaborations:** The analysis emphasized the aims of international organizations to avoid overdependence on long-term humanitarian aid by supporting local resilience-building efforts that are

informed by research and governed transparently. Careful consideration of the current research must be integrated into active recommendations and, ideally, requirements to employ mitigation and adaptation methods to place the power to act into the hands of those on the ground. Alongside their own interventions rolled out in refugee contexts, the IFRC proposed adapting successful urban heat mitigation strategies to complement the unique concerns of refugee contexts (IFRC et al. 2022) Both the results of these refugee camp interventions and the potential of urban heat mitigation techniques could be a promising direction to spark action.

- **Promote a coherent international response through transparent, interagency partnerships:** All of the international organizations urge for a more coordinated climate change response across the humanitarian sector – a lofty goal that will rise in necessity in mitigating and adapting to dangerous heat in the EHAGL (MSF and Lancet Countdown: Tracking Progress on Health and Climate Change 2019; USAID 2019; MSF 2020a; DRC 2021; NRC 2021; Peters et al. 2021; IFRC et al. 2022; UNHCR 2022; USAID and United States Department of State 2023) Organizations must uphold and enhance their current reporting and documentation transparency policies to foster internal and external relationships. Information and knowledge sharing of the success and failures of heat-related interventions will be key to ensuring efficient implementation of effective protection of refugees across the EHAGL and avoiding organizational redundancy.

For EHAGL national governments:

- **Integrate dangerous heat risks in refugee contexts in existing and future policy goals**

directly or indirectly: The analysis illustrates that climate action policy primarily takes the form of developing early warning systems, promoting public awareness of climate-related disaster risks, and managing natural resources sustainably. Each of these policies have the potential to indirectly mitigate dangerous heat risks on health, which could describe why there is no targeted dangerous heat action within countries. To name a few examples: early warning systems can be used to disseminate information and appropriate mitigation strategies that would be most effective during an incoming heat wave (Kovalevski n.d.) Sustainable natural resource management and afforestation programs can be used to lower local temperatures (Environmental Protection Agency 2025) Building the capacity of healthcare systems by training health personnel and providing appropriate equipment can be tailored, in part, specifically to heat emergency response (American Public Health Association 2025) Although dangerous heat is not a primary driver of introducing such policy and action, creatively and critically considering how existing institutional priorities and actions inadvertently alleviate the impacts of dangerous heat may be a focus in future decision-making. Ideally, refugees would be fully protected by national services through both adaptation and mitigation measures developed to specifically avoid lethal heat impacts on health (e.g., installing cooling centers, programs targeting heat public awareness). However, policies centered on dangerous heat may not be realistic in some cases due to funding constraints and political priorities. As many of the existing legal frameworks in the EHAGL region focus primarily in environmental protection, healthcare, and sustainable energy, policies and programs implemented in refugee contexts can be amended to incorporate dangerous heat and refugee populations in the goals. For example, requiring monitoring of local

temperature changes in afforestation and green space campaigns to identify the impact and populations that benefit or simply identifying refugees as a priority vulnerable population in all national climate change action frameworks. Efforts to integrate not only heat impacts on health but also refugee considerations into future and existing policies, even in small ways, can be pivotal in the support of increasing resilience of refugee populations in the EHAGL region.

Research constraints and future research directions

This analysis does not encompass all active on-the-ground conditions and action due to the types of documents and organizations included and assumptions on the living standards of refugees.

This analysis focuses only on the active and aspirational engagement through policy of international and national actors that is present on paper. The details provided in analyzed policy documents may not reflect what has and is happening on the ground in refugee settlements in its entirety. Additionally, several assumptions on the daily lives of refugees in the EHAGL region were drawn when formulating conclusions (i.e., high likelihoods of rising heat trends in Africa living with high environmental exposure due to little infrastructure and high degree of separation from nationals), thus results could be overlooking the lived experiences and protections of specific refugee populations.

The scope of this review is broad and should not be used prescriptively to implement specific initiatives. The analysis of organizations was dependent on manual review of open-access documents written in English or that were able to be translated using the DeepL browser

translator tool using a list of discrete key terms. This review may have missed more nuanced engagement and policy initiatives due to the sheer number and length of documents. In addition, action of one organization over another may have been painted as more inflated or prominent due to the number of related documents that were available publicly and could be translated to English. The results of this report should be interpreted as a broad overview of what current protections currently look like and should be used to identify gaps in refugee protection in the EHAGL region.

To remediate these research limitations, immediate future research directions must focus on characterizing on the ground reports of dangerous heat in EHAGL refugee settlements.

Understanding what is being implemented, what is successful, what program success means, and how programs can be adapted to best suit refugee needs and protect health and wellbeing is necessary to build the scaffolding for local extreme dangerous heat policy and garner support for introduction. Future research must consider refugee- and camp-lead initiatives to preserve resilience against dangerous heat such as education, afforestation or reforestation, and improving building codes. Specifically engaging with African researchers and leaders will illuminate the truth of heat impacts on health and how it is being and will be addressed. Special consideration should be placed on investigating how responsibility to develop, promote, and integrate dangerous heat mitigation and adaptation measures should be shared. Comparing how each actor can support efforts and alleviate pressures on refugee populations will be integral to the effective protection of refugees. Additional research directions extending beyond the impacts of heat on health might include assessing impacts of heat on other natural and anthropogenic systems that refugees depend on, such as agriculture, livestock, and the local economy, the feasibility of

integrating dangerous heat in humanitarian climate change policy on a national level; and the possibility of adapting urban heat mitigation techniques to specific refugee contexts.

Conclusion

Analysis of policy action and program interventions of humanitarian organizations and countries in the EHAGL region reveal a lack in targeted protection of refugee health against rising risks of dangerous heat. Of the six international humanitarian organizations and eleven EHAGL countries analyzed, only one humanitarian organization documented evidence of dangerous heat interventions in refugee contexts despite the vast majority expressing urgency to address health risks of heat. This review provided a unique opportunity to understand thematic approaches to climate-related humanitarian challenges. Humanitarian climate change frameworks emphasized the importance of collaboration to develop transparent, localized solutions that are informed by research and promote national policy. Existing national policy in the EHAGL primarily focused on the agriculture and health sectors, proposing early warning systems and more intensive environmental protection yet generally lacking refugee representation.

Rising risks of heat in refugee settlements, high exposure and vulnerability of refugee populations, and limited coping capacities in the EHAGL region emphasizes the dire need to implement strategies and policies to address dangerous heat. This report serves as a reminder of the 6.1 million people forcibly displaced and seeking refuge in the EHAGL region that are disproportionately impacted by climate change, the associated challenges of rising heat, and the lack of protections afforded to them against dangerous impacts (UNHCR 2024c, 2025a)

Actionable dangerous heat recommendations must be developed and implemented internationally and nationally to protect the lives of millions in the face of current and projected dangerous heat risks.

Abbreviations

DRC	Danish Refugee Council
EHAGL	East and Horn of Africa Great Lakes
HEWS	Heat Early Warning Systems
HHAP	Heat-Health Action Plans
HHB	Human Heat Balance
IFRC	International Federation of Red Cross and Red Crescent Societies
MSF	Médecins Sans Frontières
NAP	National Adaptation Plan
NAPA	National Adaptation Programmes of Action
NCCAP III	Third National Climate Change Action Plan
NRC	Norwegian Refugee Council
RPRF	Refugee Policy Review Framework

UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
WBGT	Wet-bulb Globe Temperature

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ADDITIONAL FILES

Table 4 is cited in text on page 18.

<i>Table 4.</i> National policy engagement with dangerous heat considerations.				
Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
Burundi	Aspirational	Burundi's 2019 NAP acknowledged prolonged heat events can contribute to heightened risks of morbidity and mortality (Republic of Burundi Ministry of the Environment, Agriculture and Livestock 2023, p. 39)	Protection sanctioned by international law (Republic of Burundi 2021)	Equal rights to healthcare as nationals (Republic of Burundi 2016, 2021)

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
Ethiopia	Aspirational	Ethiopia's 2019 Climate Resilient Green Economy NAP specifically acknowledged the increased risks of disease spread and malnutrition as potential heat-health impacts, but no active policy or program could be identified (Federal Democratic Republic of Ethiopia 2019a, p. 20)	Protection sanctioned by international law: Additional protection afforded to refugee populations with unique needs (Federal Democratic Republic of Ethiopia 2019b)	Equal rights to healthcare as nationals (Federal Democratic Republic of Ethiopia 2019c)
Eritrea	Aspirational	The 2007 State of Eritrea NAPA directly identified temperature increases and heat stress as threats to public health, identifying that refugees will be among some of the most vulnerable populations to impacts (State of Eritrea Ministry of Land, Water,	No documents found defining protection of refugee populations.	No documents found defining healthcare access of refugee populations.

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
		and Environment and Department of Environment 2007, pp. v, 11)		
Kenya	Aspirational	The 2023 Kenyan National Climate Change Action Plan recognized increased incidence of heat stress driven by rising temperatures as possible risks to the national health sector (Republic of Kenya Ministry of Environment, Climate Change and Forestry 2023, pp. 29, 35, 102)	Protection sanctioned by international law: The Commissioner for Refugee Affairs is responsible for ensuring delivery of adequate services and facilities (Republic of Kenya 2021)	Humanitarian-driven, government-supported healthcare: Populations in refugee camps (including host communities) have free access to UNHCR-funded healthcare in registered national public health facilities, supplemented by government-provided commodities (United Nations High Commissioner of

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
				Refugees and WorldBank 2022)
Somalia	Aspirational	Heightened incidence of heat stress, exhaustion, and stroke have been reported as risks of rising temperatures, alongside threats to livelihoods and outdoor labour productivity (Federal Republic of Somalia Ministry of Natural Resources 2013; Federal Republic of Somalia 2020, pp. 23, 43)	No documents found defining protection of refugee populations.	No documents found defining healthcare access of refugee populations.

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
South Sudan	Aspirational	Increased morbidity caused by cardiovascular and respiratory diseases driven by dangerous heat and the nationwide predominance of outdoor-based livelihoods was acknowledged with plans to map populations most susceptible to climate change-driven health risks. No updates or reports of such actions could be found (Republic of South Sudan Ministry of Environment and Forestry 2021, pp. 67–68, 102)	Protection sanctioned by international law: The Commission of Refugees Affairs coordinates projects and delivery of adequate facilities and services (Republic of South Sudan 2012)	Equal rights to healthcare as nationals (Republic of South Sudan 2012)

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
Sudan	Aspirational	Two Sudanese regions, Gadaref and Red Sea, specifically named health adaptation priorities to improve healthcare in the event of heat/sunstroke, however, no further details about these programs could be identified (Republic of Sudan Ministry of Environment, Natural Resources and Physical Development 2016, pp. 40, 87–88)	Protection sanctioned by international law: The Commission of Refugees is responsible for providing protection and services to refugees (Republic of Sudan Ministry of Interior 2014)	No documents found defining healthcare access of refugee populations.
Tanzania	Aspirational	Heat illnesses, including exhaustion and stroke, and resulting increased incidence of water-borne diseases were acknowledged as rising health risks in Tanzania's 2021-2026 National Climate Change Response Strategy	Protection sanctioned by international law: Provision of adequate services and facilities is coordinated by the Director of Refugee Services (United	No documents found defining healthcare access of refugee populations.

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
		(United Republic of Tanzania 2021, pp. 51–52)	Republic of Tanzania 1999; United Republic of Tanzania Ministry of Home Affairs 2003)	
Uganda	Aspirational	Rising temperatures are explicitly noted as a risk to public health and have been identified as a prominent, crosscutting concern that impacts multiple societal sectors (Republic of Uganda 2007, pp. xiv, 26)	Protection sanctioned by international law: The Office of Refugees provides services to ensure the welfare of refugees (Republic of Uganda 2006, p. 8)	Equal rights to healthcare as nationals (UNHCR and WorldBank 2024a)
Djibouti	Absent	Djibouti's 2019 NAP in Focus reported increases in temperatures but makes no description of impacts (Republic of Djibouti	Protection sanctioned by international law (Republic of Djibouti 2017a, b)	Equal rights to healthcare as nationals (Republic of Djibouti 2017a, b)

Table 4. National policy engagement with dangerous heat considerations.

Countries	Dangerous Heat Engagement	Engagement Summary	National Refugee Protection	National Refugee Healthcare Provisioning
		2019)		
Rwanda	Absent	No mention of rising temperatures or heat in any of the documents.	Protection sanctioned by international law (Republic of Rwanda 2016)	Humanitarian-driven, government-supported healthcare: Refugees in camps receive healthcare from UNHCR-sanctioned facilities (UNHCR and WorldBank 2024d)