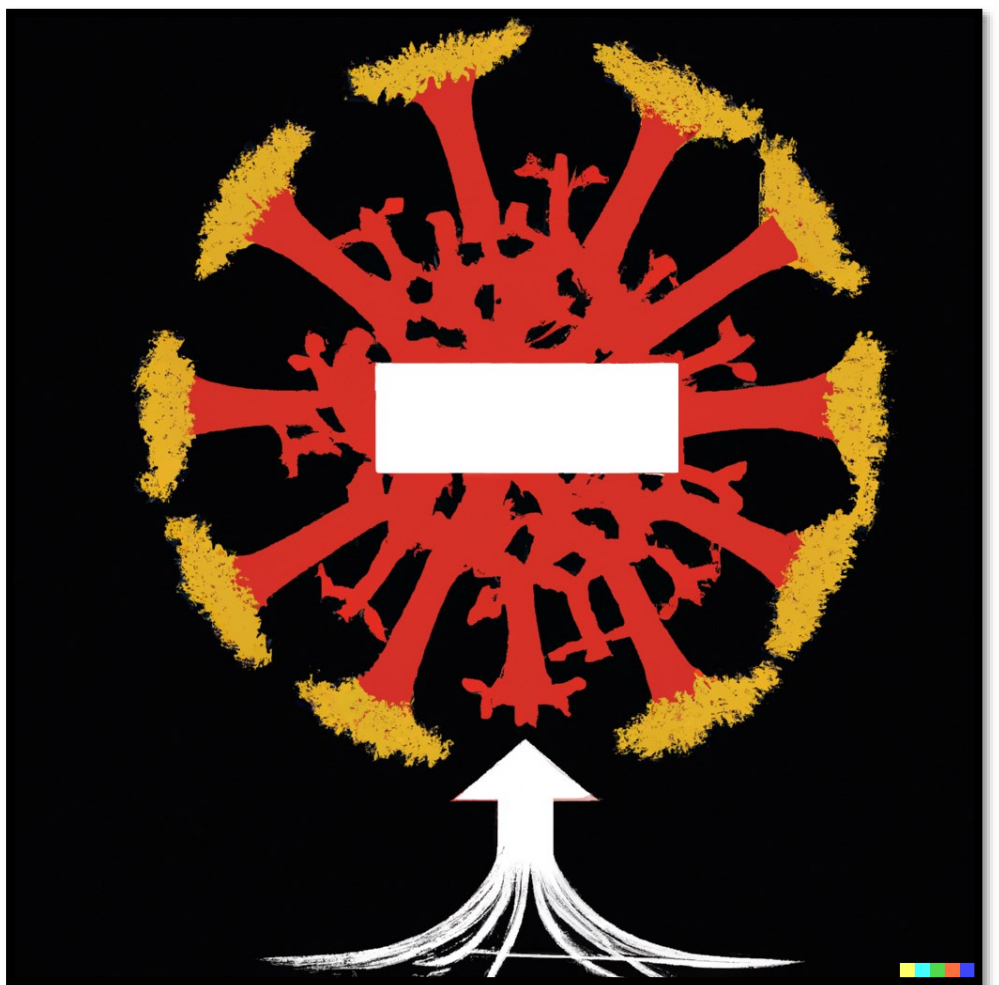


Climate change, migration, and zoonoses in the East and Horn of Africa region: A call for action



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This technical brief presents an overview of the available evidence connecting climate change, migration, and zoonotic disease risk in East and Horn of Africa, highlighting the gaps in policy and programming for the human mobility and global health security nexus, and providing key recommendations to policymakers and implementing agencies.

¹ Image generated using the OpenAI, DALL-E, 2023 (<https://labs.openai.com>)

BACKGROUND

The climate change migration and zoonotic disease nexus

Climate change, migration and zoonotic diseases are interconnected, and pose some of the most pressing challenges of our time. Climate change affects the environmental factors that can promote or inhibit the survival, reproduction, abundance, and spread of diseases, vectors, and hosts, as well as the modes of disease transmission and the frequency of outbreaks.² According to the Intergovernmental Panel on Climate Change (IPCC), human-induced climate change will increasingly affect weather and climate extremes³, and droughts and floods have significantly increased over the past decades.⁴ UN Secretary-General António Guterres noted that "*we are on a fast track to climate disaster*", as scientists predict unprecedented changes in temperatures and precipitation by 2040, with temperatures expected to rise by as much as 3–6°C in the intermediate and worst-case emissions scenarios. Up to 1.2 billion people could become displaced as a result of climate change globally by 2050⁵, reflected by an unprecedented 89.3 million forced migrants in 2021, of which the majority internally displaced people (IDP) were displaced as a result of disasters, primarily in Sub-Saharan Africa.⁶

The East and Horn of Africa (EHOA) region is particularly susceptible to the effects of climate change, evidenced by rising temperatures, unpredictable rainfall, and protracted droughts. The arid and semi-arid lands (ASALs) across Ethiopia, Kenya, and Somalia are currently facing severe water shortage, food insecurity with high levels of malnutrition, and outbreaks of communicable disease, with millions of people and livestock forced to migrate, either cross-border becoming refugees, or as internally displaced people (IDPs).⁷ IOM recorded a 2-3 fold increase in forced movement due to drought in Ethiopia from January to February 2022 only, with the vast majority originating from areas where the drought is most observable.⁸ While temperature is most strongly associated with out-migration between January and March across the region, precipitation levels primarily influence out-migration between July and September.⁹

Increasing evidence is available on the linkages between climate change and migration^{10 11 12} and climate change and zoonotic disease risks¹³, including as a result of changing pathogen and vector environments, although the nexus of migration, climate change and zoonoses is not comprehensively understood and/ or addressed. To address these challenges, experts proposed a framework presenting the relationship of environmental changes (and by extension, climate change), migration,

² Wu et al, 2016. [Impact of climate change on human infectious diseases: Empirical evidence and human adaptation](#). Environment International, 86, 14-23.

³ IPCC, 2021, [Sixth Assessment Report, Climate Change 2021: The Physical Science Basis](#)

⁴ UNCCD and FAO, 2020. Land degradation neutrality for water security and combatting drought, Bonn.

⁵ Institute for Economics and Peace, 2020. [Over one billion people at threat of being displaced by 2050 due to environmental change, conflict and civil unrest](#)

⁶ IDMC, 2022. [Global Report on Internal Displacement](#)

⁷ UNICEF, 2022. Ethiopia Emergency Drought Appeal.

⁸ DTM Ethiopia, 2022. [Flow Monitoring Dashboard 30](#)

⁹ DTM, 2021. Climate and Migration in East and the Horn of Africa: Spatial Analysis of Migrants' Flows Data available at <https://dtm.iom.int/reports/climate-and-migration-east-and-horn-africa-spatial-analysis-migrants%E2%80%99-flows-data> (accessed on 7, November 2022)

¹⁰ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4558275/pdf/IJCH-74-27913.pdf>

¹¹ <https://www.mdpi.com/1660-4601/15/9/1884>

¹² https://www.mdpi.com/1660-4601/17/24/9342?type=check_update&version=1

¹³ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4720222/pdf/kvir-06-06-1021539.pdf>

and health (including zoonotic diseases).¹⁴ The role of domestic animals in climate change related mobility and displacement, the impact on host communities, and the potential benefits of maintaining displaced communities' access to animals in terms of livelihoods and health, need to be actively researched to better inform policies and programmes. Traditional epidemiological approaches may struggle to represent the intersections of biological and social processes, creating barriers to an accurate representation of the complex factors driving zoonotic disease emergence, transmission, and distribution.

Population movement as a result of climate change impacts cross-species viral transmission risk¹⁵, with the resulting changes in land use considered the largest driver of zoonotic infectious disease emergence.¹⁶ Zoonotic diseases represent a growing threat to public health, with an estimated 75 percent of newly emerging human pathogens originating in animal species.¹⁷ Spill over events, whereby the pathogen jumps between animals and humans, have been the trigger of many epidemics and pandemics, including COVID-19, Ebola, posing a major threat to global health security.

Zoonotic disease risk and vulnerability in EHoA

Zoonotic disease risks and vulnerabilities are amplified or reduced along the spatiotemporal scale of migration. Population movement is associated with increased mixing of displaced, mobile and host human and animal populations, including through increased contact between domestic animals, wildlife, and humans, which risks increased disease transmission between species. When animals and humans move into new environments, they may face new pathogens and vectors prevalent among local populations. Crowded and unsanitary living conditions in relief and refugee camps increase vulnerability to infectious disease, further linked to malnutrition and long-term stress as a result of movement. Health services and staff may be affected during disaster and displacement, hampering an organized health response, the availability of quarantine and vaccinations, in turn exacerbating the risk of zoonotic disease outbreaks.¹⁸

EHoA is one of the regions identified at most risk of zoonotic disease emergence and transmission¹⁹, with climate change exacerbating risks through changing environments, and the spread of pathogens and vectors such as mosquitoes. According to the WHO, the region is currently experiencing various outbreaks of zoonotic diseases including Ebola, anthrax, hepatitis E, and leishmaniasis, while the COVID-19 pandemic is ongoing in the region.^{20 21}

Impact on migrants, host communities, and communities of origin

While natural hazards due to climate change and environmental degradation may increase forced displacement, migration can also be adopted as a mitigation and adaptation strategy to escape the

¹⁴ <https://environmentalmigration.iom.int/blogs/connecting-planetary-health-environmental-changes-and-migration-times-pandemic>

¹⁵ Carlson et al, 2022. [Climate change increases cross-species viral transmission risk](#), Nature.

¹⁶ Bernstein et al, 2022. [The costs and benefits of primary prevention of zoonotic pandemics](#), Science Advances

¹⁷ Jones et al, 2008. Global trends in emerging infectious diseases. Nature 451:990-94

¹⁸ Braam et al, 2021. [Identifying the research gap of zoonotic disease in displacement: a systematic review](#), Global Health Research and Policy

¹⁹ ILRI, 2012. Mapping of poverty and likely zoonoses hotspots, Nairobi: International Livestock Research Institute

²⁰ WHO Regional Office for Africa, 2022. [Weekly Bulletin on Outbreak and other Emergencies: Week 33: 8 - 14 August 2022](#).

²¹ WHO, 2022. 'Ebola Disease caused by Sudan virus – Uganda'[online]. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON421>

worst impacts of climate change and prevent future forced displacement. Whether natural hazards cause disasters and/ or displacement depends on complex interlinkages between political, socio-economic, cultural, environmental and local factors and contexts. Similarly, zoonotic disease transmission during mobility is a culmination of the presence of zoonotic pathogens and socio-economic factors influencing vulnerability and risk. The burden of, and responses to zoonoses is felt unequally across populations^{22 23} with endemic zoonotic diseases accounting for an estimated 20 percent of human illness and death in low- and middle-income settings.²⁴ The COVID-19 pandemic further revealed structural health inequalities²⁵, with migrants more likely to fall ill with COVID-19 due to their precarious living and working conditions, affecting not only migrant communities, but also those remaining behind depending on remittances.²⁶

Protection and evidence gaps

For the purpose of this document, and in line with the WHO Resolution 70.15, the term ‘Refugees and Migrants’ is often used jointly, with the understanding that specific legal frameworks apply to refugees, and differ from other migrant categories, positioned differently within national and international legal frameworks. This involves different entitlements and challenges in access and utilization of health services by the varying categories of migrants. This document recognizes the country self-determination in this matter and in this respect and acknowledges the lack of consensus on recognition of refugee (or other) status for people forced to move due to climate change, disasters and environmental degradation.

Stakeholders across the EHoA region and the wider African continent are increasingly aware of the challenges faced by migrants when claiming protection on environmental grounds in other African countries. Emblematic examples include the case law of the African Commission on Human and People’s Rights, in which the climate impacts in terms of loss of livelihood, human rights violations (including the right to health), and forced displacement are acknowledged as relevant elements to be taken into account when determining the need of protection.²⁷ In the EHoA region, the Intergovernmental Authority on Development (IGAD) transhumance protocol²⁸ provides free cross-border movement of nomads and their livestock within and across states as an adaptation mechanism to climate change and weather variability. The protocol is a good example of protection within a One Health approach²⁹, which is further elaborated below. The protocol promotes access to health care

²² [Missing: Where Are the Migrants in Pandemic Influenza Preparedness Plans?’– Health and Human Rights Journal \[online\]. Available at: <https://www.hhrjournal.org/2018/05/missing-where-are-the-migrants-in-pandemic-influenza-preparedness-plans/>](https://www.hhrjournal.org/2018/05/missing-where-are-the-migrants-in-pandemic-influenza-preparedness-plans/)

²³ “Don’t forget the migrants”: Exploring preparedness and response strategies to combat the potential spread of MERS-CoV virus through migrant workers in Sri Lanka ‘ Migration Health Research Portal (iom.int) [online]. Available at: <https://migrationhealthresearch.iom.int/%E2%80%9Cdon%E2%80%99t-forget-migrants%E2%80%9D-exploring-preparedness-and-response-strategies-combat-potential-spread-mers>

²⁴ Tasker and Braam, 2021. [Positioning zoonotic disease research in forced migration: A systematic literature review of theoretical frameworks and approaches](https://doi.org/10.1371/journal.pone.0241111), PLOS ONE

²⁵ Macdonald, 2021. [Emerging from COVID-19: A New, Rights-Based Relationship with the Nonhuman World?](https://doi.org/10.1186/s12916-021-02000-0), Health and Human Rights Journal 23/2

²⁶ Braam et al, 2021. [Lockdowns, lives and livelihoods: the impact of COVID-19 and public health responses to conflict affected populations - a remote qualitative study in Baidoa and Mogadishu, Somalia](https://doi.org/10.1186/s12916-021-02000-0), BMC Conflict and Health

²⁷ African Commission on Human and People’s Rights, Resolution on Climate Change and Forced Displacement in Africa, ACHPR/Res. 491 (LXIX), 5.11.2021.

²⁸ IGAD, 2020. [Protocol On Transhumance](https://www.igad.int/publications/protocol-on-transhumance)

²⁹ <https://www.nature.com/articles/s41598-022-12619-1>

services for pastoralists through the harmonization of national laws and policies concerning disease control, and bilateral or multilateral agreements. However, there remain significant gaps in implementation and financing. As a result of gaps in assistance to migrants and their animals during the current drought for instance, many have been unable to bury animal carcasses and are forced to live in unsanitary and crowded living conditions. Increased interactions between migrants' and host communities' livestock enhances the risk of zoonotic pathogen transmission. Elsewhere, animals may be sold or abandoned, affecting people's nutrition, psychosocial health, and ability to rebuild livelihoods.

It is relevant to note that 46 out of 55 African States have ratified the African Union Convention Governing the Specific Aspects of Refugee Problems in Africa (AU Convention)³⁰, the main regional refugee instrument. The AU Convention broadens the traditional refugee definition endorsed by the 1951 Geneva Convention on the Status of Refugees³¹ as it "shall also apply to every person who, owing to external aggression, occupation, foreign domination or events seriously disturbing public order in either part or the whole of his country of origin or nationality is compelled to leave his place of habitual residence in order to seek refuge in another place outside his country of origin or nationality"³². Whether this definition applies to migrants in the context of climate change is still contested however,³³ with some arguing that this definition is broad enough to cover famine, drought and other natural catastrophes³⁴. Recently, UNHCR called for a more dynamic and evolutionary approach towards the interpretation of the AU Convention, including the definitions of forced migration and displacement, to reflect developments in international law more broadly: "This is particularly important for the interpretation of the concept of 'events seriously disturbing public order' if the changing realities for people in need of international protection are to be accommodated where they are affected by the adverse effects of climate change and disasters. In line with this approach, people displaced by the adverse effects of climate change and disasters can be refugees under regional refugee criteria"³⁵. Some African States seem reluctant to provide the refugee status to migrants fleeing as a result of environmental degradation, limiting assistance and protection to humanitarian activities or temporary protection in the context of climate change³⁶. For instance, Botswana and Tanzania have allowed access to their territories to people from neighboring States, especially from Mozambique and Malawi, fleeing disasters such as floods on humanitarian grounds³⁷. However, there

³⁰ M. Sharpe, *Regional Refugee Regimes: Africa*, in C. Costello, M. Foster, and J. McAdam (eds) *The Oxford Handbook of International Refugee Law*, Oxford University Press, 2021.

³¹ According to Article 1.2(A), a refugee is a person who "owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality [or former habitual residence] and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country".

³² AU Convention, Article 1(2).

³³ M. Sharpe, *cit.*, p. 8

³⁴ A. Grahl-Madsen, *International Refugee Law Today and Tomorrow*, in *International Refugee Law*, 1982, p. 440. See also M. R. Rwelamira, *Two Decades of the 1969 OAU Convention Governing the Specific Aspects of the Refugee Problem in Africa*, 1988.

³⁵ UNHCR, *Legal considerations regarding claims for international protection made in the context of the adverse effects of climate change and disasters*, October 2020, para 14.

³⁶ Chiara Scissa, *The principle of non-refoulement and environmental migration: A legal analysis of regional protection instruments*, in *Diritto, Immigrazione e Cittadinanza*, 3/2022, <https://www.dirittoimmigrazionecittadinanza.it/saggi/1006-the-principle-of-non-refoulement-and-environmental-migration-a-legal-analysis-of-regional-protection-instruments/file>

³⁷ *Idem*, p. 36.

are also notable examples of refugee status protecting against disaster displacement. Emblematically, Kenya, Ethiopia, Djibouti and Uganda among other African States granted the refugee status as provided under the AU Convention to the first Somalis fleeing the 2011 drought³⁸.

Whereas the AU Convention provides protection to people fleeing cross-border, the so-called Kampala Convention explicitly refers to internal displacement due to natural or human-made disasters, including climate change.³⁹ Its primary aims are to promote and strengthen regional and national measures to prevent and mitigate root causes of internal displacement, including as a result of environmental factors, and provide protection and assistance to internally displaced persons in Africa. To date, however, only 27 out of 55 African States have ratified the Convention and few attempts at implementation have been made so far. Nevertheless, a new Kampala Ministerial Declaration on Migration, Environment and Climate Change was recently signed by the IGAD Member States, the East African Community (EAC) State Partners. Among other things, they expressed concern about “the progressive desertification and land degradation creating forced mobility of people and livestock” and committed to “implement and domesticate the provisions of the United Nations Convention to Combat Desertification (UNCCD), underscoring the role of the State in addressing desertification, land degradation and drought as one of the drivers of poverty and forced mobility”⁴⁰.

Systems thinking: One Health

Climate change, migration, and the emergence of novel zoonoses, including Ebola and COVID-19, have highlighted the interlinkages between human, animal, and environmental health and wellbeing. Addressing these existential threats therefore requires more holistic systems thinking. Increasingly, interdisciplinary frameworks are used to emphasize the links between the natural environment and health outcomes, such as the One Health framework, which promotes interdisciplinary collaboration among those working in public health, veterinary medicine, environmental protection and other fields, to address the risk of global health threats as a result of changing climate conditions and zoonotic diseases with pandemic potential. COVID-19 and other zoonoses have shown the importance of using a One Health approach in combating emerging and re-emerging zoonotic diseases across the human, animal, and environmental health sectors.⁴¹

The recently established One Health High Level Expert Panel (OHHLEP) defined One Health as 'an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals, and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent'.⁴²

³⁸ S. Weerasinghe, *In Harm's Way*. International protection in the context of nexus dynamics between conflict or violence and disaster or climate change. Legal and Protection Policy Research Series. UNHCR, December 2018, p. 41; T. Wood, *Protection and Disasters in the Horn of Africa: Norms and Practice for Addressing Cross-Border Displacement in Disaster Contexts*. UNHCR, December 2018, p. 25.

³⁹ African Union Convention for the Protection and Assistance of Internally Displaced Persons in Africa (Kampala Convention)

⁴⁰ Kampala Ministerial Declaration on Migration, Environment and Climate Change signed by the Member States of the Inter-Governmental Authority on Development, the East African Community, and the States of the East and Horn of Africa, 29th July 2022, pp. 1-4, available at https://environmentalmigration.iom.int/sites/g/files/tmzbdl1411/files/documents/Kampala%20Ministerial%20Declaration%20on%20MECC_English%20signed.pdf

⁴¹ CDC, 2021. Importance of One Health for COVID-19 and Future Pandemics. <https://www.cdc.gov/media/releases/2021/s1103-one-health.html>

⁴² WHO, 2021. [Tripartite and UNEP support OHHLEP's definition of "One Health"](#)

One Health in migration: promoting and ensuring human, animal, and environmental health throughout migration contributes toward food security, assets, employment opportunities, gender equality, and facilitates migration in the context of climate change adaptation, while enhancing the resilience of affected communities

The Global Compact for Safe, Orderly and Regular Migration (GCM) and the WHO Global plan for the health of migrants and refugees do not define the role of livestock, although there are several promising initiatives which focus on health protection in the context of climate change.⁴³ These high-level intergovernmental agreements outlined below, do not however include references to migrants nor their animals, even though these marginalized communities face significant health and protection risks related to intersecting socio-economic vulnerabilities.

The East Africa Community (EAC) adopted a multidisciplinary One Health approach in the management and control of diseases, approved at the 29th Ordinary Meeting (EAC/CM 29/Decision 38) and the 9th Ordinary Meeting of the EAC Sectoral Council of Ministers of Health in April 2014 (EAC/SCM/Health/Decision 046 and 047). The EAC Council of Ministers of Health established the EAC Regional One Health Platform (EAC/CM 35/Decision 64) which aims at integrating the human, animal, and environmental health sectors during preparation, response, and recovery measures in order to successfully address public health threats. The new EAC One Health Strategy, 2022-2027 has been endorsed aims at promoting the One Health approach in the EAC region.

Notably, One Health is embedded in the Treaty for the Establishment of the East African Community which provides the framework for the region's nations to collectively conduct population-beneficial disease control measures. Article 105 (2) (f) allows for the formation of collaborative programs for the control of animals, plants, diseases, and pests, and Article 108 concentrates on animal health and zoonotic diseases. A shared perspective on the management of animals and natural resources is described in Articles 114 and 116. Article 117 defines the area of collaboration as encompassing health and Article 118 calls for "joint effort towards the prevention and control of communicable and non-communicable illnesses and to control pandemics and epidemics". The EAC secretariat has integrated the One Health into several guidelines, policies, and regional response plans such as Regional Contingency Plan for Pandemic Preparedness and Response 2018-2023 and The Regional Risk and Crisis Communication Strategy 2018/2019- 2022/2023 which includes five Standard Operating Procedures (SOPs) for their implementation. These agreements, protocols and initiatives are increasingly implemented through the development of national regulatory frameworks and policies supporting the One Health approach within and across countries.

As an example, the East African Integrated Disease Surveillance Network (EAIDSNet) has been established to promote the One Health Approach by strengthening the capacity for integrated disease surveillance and control activities. The network also promotes the exchange and dissemination of information through the Integrated Disease Surveillance and Response (IDSR) which incorporates regional disease surveillance systems, supporting the control of pandemics, epidemics, and zoonotic diseases in the EAC Partner States. The project's overall objective is to lower morbidity and mortality from common communicable diseases in the East African region by developing a strong network that can produce useful epidemiological data for early epidemic detection and support collaborative planning and implementation of disease control measures. Establishing mechanisms for continuous monitoring and evaluation to support the tracking of such control measures (i.e., in terms of outputs,

⁴³ Human Rights Council Resolution 48/13 (October 2021) recognizes the right to a clean, healthy, and sustainable environment; United Nations Environment Assembly (UNEA) draft resolution on the animal welfare–environment–sustainable development nexus (February 2022).

successes, challenges, scope, and scale) is encouraged as early as possible in the planning phase of the monitoring and evaluation, and in alignment with a standardized framework.⁴⁴

Along these lines, it is worthwhile highlighting the importance of providing people who are unable to return due to disasters, climate change and environmental degradation, with access to health care and education for children.⁴⁵ Prioritizing prevention is also key considering the complexity and interconnection of the challenges that threaten humans, animals, plants, and the environment. These overlapping challenges require not only integrated and systemic solutions but also systemic preventive mechanisms that holistically consider the health of humans, animals, plants and the environment.⁴⁶

CONCLUSION AND RECOMMENDATIONS

The global response to COVID-19 and the re-emergence of other zoonoses such as Ebola, highlights the need for improved action and focus on the protection of humans, animals, and the environment in the context of climate change, migration, and health. Projected increases in human and animal mobility and connectivity, along with frequent zoonoses outbreaks in the region, underline the need to address these threats simultaneously. To further improve the health and wellbeing of communities most affected by climate change-related migration, the importance of the presence of domestic animals, and trade-offs between access to animals, human health and livelihoods need to be better understood. Livestock and other animals need to be included and accommodated in human mobility responses, enabling migrants to resettle or return to their livelihoods post-displacement.

While in the EHOA region the IGAD and EAC member states have made significant progress in including migrants and/ or animals across regional health policies, there remain gaps in responses to migration in the context of climate and environmental challenges, while national regulatory frameworks are not yet sufficiently financed and implemented. Increasing participatory and flexible approaches for short and long-term solutions align with the global trend toward localization and resilience building, bridging the gaps between humanitarian and development assistance. Migrants and host populations need to be included in the development of policies and programs, and their agency supported through enabling inclusive legal frameworks and sufficient direct funding. It is important to keep in mind that any investments in public health processes and changes need to be locally meaningful and self-sustaining in the long-term.

KEY RECOMMENDATIONS FOR POLICY MAKERS AND RESPONDERS

- Improve coordination and information sharing between migration, health, and environmental sectors, as well as fostering transparent collaboration in inter-state projects, and training for better disease prevention, detection, and control;
- Develop sustainable solutions for health preparedness, resilience, and response to climate change and migration and the underlying defining processes, call for sustained support to animals and humans, before, during, and after migration;

⁴⁴ Ghai, R.R., Wallace, R.M., Kile, J.C. et al. A generalizable one health framework for the control of zoonotic diseases. *Sci Rep* 12, 8588 (2022). <https://doi.org/10.1038/s41598-022-12619-1>

⁴⁵ [International Organization for Migration \(IOM\), 2022. People on the Move in a Changing Climate – Linking Policy, Evidence and Action. IOM, Geneva](#)

⁴⁶ FAO, UNEP WHO, and WOA, 2022. Global Plan of Action on One Health. Towards a more comprehensive One Health, approach to global health threats at the human-animal-environment interface. Rome. <https://doi.org/10.4060/cc2289en>

- Ensure human and animal health are incorporated in climate change dialogues, frameworks and actions, including but not limited to the operationalization of the 2022 Kampala Declaration on Migration, Environment and Climate Change signed by the IGAD Member States, the East African Community (EAC) Partner States;
- Make use of existing GCM-related coordination forum (such as National Coordination Mechanism NCM, Regional Consultative Process RCP) to advocate for One Health in the climate change, migration and health nexus;
- Continue enhancing capacity and sensitization on the nexus and the impact of climate change on migration and zoonoses among relevant stakeholders and communities;
- Collect and collate contextualised evidence across the region and countries on the climate change, migration, and zoonoses nexus, including through social science integration and advocacy, positioning animal and human health as key in vulnerable systems;
- Strengthen zoonotic diseases surveillance, including community based-event surveillance in climate change prone areas (i.e., living conditions, sanitation, veterinary public health) through a One Health approach, with the baseline to maintain access to livestock to protect livelihoods, nutrition, and mental health, reducing people's vulnerability to disease across borders;
- Acknowledge the agency of disaster-affected communities for risk mitigation and adaptation (according to the Sendai Framework and Paris Agreement), optimise local solutions by supporting and complementing community systems already in place, to allow for the inclusion of animals in emergency responses;
- Use a migrant-centered human rights-based approach to involve migrant and host communities in policy and programme development as well as in active surveillance including civil society organizations in co-creation and capacity building.