MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

A Hostile Climate

Confronting the challenges of humanitarian aid delivery in the context of climate change

August 2024

About Doctors Without Borders/Médecins Sans Frontières (MSF)
Doctors Without Borders/Médecins Sans Frontières (MSF) is an international emergency medical humanitarian organization founded by doctors and journalists in 1971. It provides neutral, impartial and independent emergency health care on the basis of need to people affected by disaster, disease, conflict and exclusion. MSF also bears witness, amplifying patient and staff experiences, and speaking out to bring abuses and intolerable situations to the public eye. Around 68,000 people work for MSF in over 77 countries. More than 80 per cent of MSF staff are hired in the countries in which the organization works.

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Category 5 cyclone Freddy is about to hit the east of Madagascar causing unknown devastation for the already vulnerable population only just rebuilding from the last deadly tropical cyclones Batsirai and Emanti. MSF teams are securing structures.
MSF/Kathryn Dalziel, 19/02/2023

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Benhilda Mtungila and a resident of Stoneridge work on a bio-waste fertilizer stations. MSF collaborated with communities in Harare, Zimbabwe, to identify medical and environmental challenges they face. They saw an opportunity to tackle waste and created a system that not only recycles food waste but also wastewater, which can prevent groundwater contamination and the spread of waterborne diseases like typhoid and cholera.
MSF/John Manzongo, 05/04/2022

Glossary

Adaptive capacity
The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences of climate change (IPCC, 2018).

Anticipatory action
Mechanisms to prevent or mitigate negative consequences to disasters that rely on weather forecasts and other predictive tools to release funding and trigger anticipatory actions before a shock is felt (Weingärtner et al., 2020).

Climate change
Refers to the "change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (United Nations, 1992). "Climate" refers to average weather.

Climate change adaptation
The process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities (IPCC, 2018).

Climate hotspot
A setting experiencing high exposure to climate change and/or environmental degradation, as well as low adaptive capacity (Patz and Kovats, 2002).

Environmental degradation
A general term for the deterioration of the natural environment and pollution. It includes reduced air, water, and soil quality, the destruction of ecosystems and habitats, and the extinction of wildlife.

Exposure
The presence in places and settings that could be negatively affected by climate-related hazards of people, livelihoods, species or ecosystems; environmental functions, services, and resources; infrastructure; or economic, social, or cultural assets (IPCC, 2018).

Loss and Damage (capitalized letters)
Refers to political debate under the United Nations Framework Convention on Climate Change (UNFCCC) following the establishment of the Warsaw Mechanism on Loss and Damage in 2013, which is intended to "address loss and damage associated with impacts of climate change, including extreme events and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change" (IPCC, 2018). "Loss and damage" in lowercase letters (alternately referred to as "losses and damages") has been taken to refer broadly to harm from (observed) impacts and (projected) risks (*WHO Policy Brief: Loss and Damage,* 2022).

Maladaptation
Actions that may lead to increased risk of negative climate-related outcomes, including via increased emissions, increased vulnerability to climate change, or diminished welfare, now or in the future. Maladaptation is usually an unintended consequence of another activity (IPCC, 2018).

Mitigation
A human intervention to reduce emissions or enhance sinks of greenhouse gases (IPCC, 2018).

Moral distress
A set of negative emotions experienced by healthcare providers and humanitarian workers in situations where they feel they cannot follow the 'right' course of action, even if this action is unachievable in practice. Such negative moral experiences can lead to feelings of powerlessness, frustration, self-doubt and helplessness (Jameton, 1984; Kiddell-Monroe et al., 2018).

Risk
The potential for adverse consequences where something of value is at stake and where the occurrence and degree of an outcome is uncertain. In the context of the assessment of climate impacts, the term "risk" is often used to refer to the potential for negative consequences of a climate-related hazard, or of adaptation or mitigation responses to such a hazard, on lives, livelihoods, health, ecosystems and species, economic, social and cultural assets, services (including ecosystem services), and infrastructure. Risk results from the interaction of vulnerability (of the affected system), its exposure over time (to the hazard), as well as the (climate-related) hazard and the likelihood of its occurrence (IPCC, 2018).

Rapid- vs. slow-onset events
A distinction is sometimes made between climate change impacts in accordance with the timescale on which they occur. A rapid-onset event may be a single event taking place over hours or days, while slow onset events evolve gradually from incremental changes occurring over the course of years, or resulting from an increased frequency or intensity of recurrent events (Siegele, 2012; UNFCCC, 2012).

Vulnerability
The propensity or predisposition to be negatively affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2018).

Executive Summary and Key Findings

A woman carries drinking water collected from the MSF water distribution tanks in Khipro, Sindh province of Pakistan. In our mobile medical clinics in northern Sindh and eastern Balochistan MSF is seeing alarming acute malnutrition. Asim Hafeez/MSF, 18/11/2022

Climate change and environmental degradation are having devastating consequences for human health, a fact witnessed directly by humanitarian staff. These impacts include injury and death; heat-induced illness; changing patterns of respiratory, water- and vector-borne disease; malnutrition; mental health problems; as well as social impacts, such as the loss of livelihoods, migration, violence and conflict. Climate change and environmental degradation are disproportionately affecting certain groups, such as children, women, disabled and older people, Indigenous people, and displaced persons.

Climate change and environmental degradation are also making providing humanitarian assistance more difficult, in two ways: by amplifying humanitarian needs, and by further complicating humanitarian interventions. Damage to infrastructure, disruptions to transport and supply chains, and increasingly harsh working conditions all make the task of humanitarian response more challenging. Moral distress—negative emotions experienced by health care providers and humanitarian workers in situations where they feel they cannot follow the 'right' course of action—also presents obstacles to effective aid delivery.

Interviews with 49 humanitarian staff working for Médecins Sans Frontières/Doctors Without Borders (MSF) in 30 countries around the world revealed that MSF operational teams are beginning to adapt to climate change and environmental degradation, creatively and instinctively, alongside the communities in which the organization works. However, this adaptation is happening in the absence of systematic strategic planning, and often in an ad hoc manner.

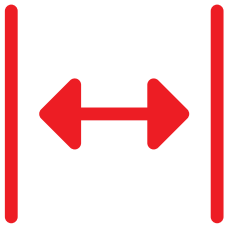
In other words, this research describes an important 'adaptation gap', wherein the health consequences of climate change and environmental degradation are high, but capacity to respond to and cope with these consequences is low. This gap is not limited to MSF or even to the humanitarian sector, but reflects an adaptation gap that has already been identified at the international scale. It reflects a broader, global reality, in which actions and measures taken to protect communities, economies, and ecosystems from the negative impacts of climate change are falling short, despite the seriousness of its harms (UNEP, 2022).

This ‘adaptation gap’ presents an opportunity for scaling up adaptation efforts within communities, as well as within health and humanitarian organizations. The following report describes some of the most immediately accessible adaptation activities, guided by the responses of humanitarian health workers participating in this research. They are grouped under four domains: ‘Knowledge and awareness’, ‘Infrastructure and technological solutions’, ‘Operational adaptation’, and ‘Policy and advocacy’.

This research was conducted to better understand how MSF humanitarian workers, patients and communities are experiencing and responding to a rapidly changing environment, and to more strategically adapting MSF’s operations to meet the challenges of climate change and environmental degradation. Its findings represent a snapshot of a moment in time within MSF; we share them in the hope that they assist other organizations to reflect on the health impacts of climate change in their practice, and to identify strategies and actions to mitigate climate-related health risks. This report also documents adaptation efforts employed, observed, and imagined by MSF teams, which may offer inspiration for others providing humanitarian assistance in an era of climate change.

Key Findings

MSF staff perceive devastating impacts of climate change and environmental degradation on themselves and their families, on communities, and on MSF's ability to operate. Climate change deals a double-blow to humanitarian assistance: it exacerbates threats to health, and makes humanitarian operations more logistically challenging and personally risky for staff.



Despite the enormity of the health impacts of climate change and environmental degradation, capacity to cope and respond to these impacts is still low within MSF and in the communities in which it works. This reflects the global 'adaptation gap', wherein efforts to adapt to the consequences of climate change by governments, health systems, and non-governmental and multilateral organizations are falling short.

The identification of this 'adaptation gap' opens up many opportunities for accelerating adaptive actions. Such actions proposed by MSF staff include: raising awareness of adaptation and adaptive strategies; further integrating an anticipatory mindset into operations; considering resilience-building measures in humanitarian assistance; and fostering collaborations that boost adaptation.

Clothes and linens are seen drying outside of homes in this aerial view of the settlement area near the river bed in Mathare, Nairobi, Kenya. Mathare was struck by flooding in early 2024. MSF/Lucy Makori, 27/04/2024

Introduction

"Those farmers, I can imagine they put their lives to harvest, and with so much hard work in this scorching heat… And then suddenly, a rain comes, or a flood comes, and washes all their hard work away. So, they are not left with much of a choice but suicide."

—Logistician, Pakistan, Male

On a global scale, the consequences of climate change are not distributed equally. The 2023 Assessment Report by the UN Intergovernmental Panel on Climate Change (IPCC) confirmed for the first time that climate change is contributing to humanitarian crises, and asserted that the impacts are disproportionately felt by those affected by poverty, inequity, and marginalization, and lacking resources to adapt (IPCC AR6, 2023). Other experts have reached similar conclusions, projecting that climate change and environmental degradation will be among the root causes of conflict, food insecurity, and displacement in the decades to come (IFRC, 2019; UNHCR, 2020).

Failure to mitigate or adapt to climate change will result in negative health outcomes (Nayna Schwerdtle et al., 2023). As such, within the humanitarian sector, increasing attention is devoted to adaptation, to be implemented alongside mitigation activities. The International Red Cross and Red Crescent Movement and the Active Learning Network for Accountability and Performance in Humanitarian Action have published several reports outlining how to adapt humanitarian action to climate change (de Geoffroy et al., 2021; ICRC, 2020; IFRC, 2019, 2023). Other types of humanitarian responses, such as anticipatory action, are also gaining momentum as adaptive strategies (Weingärtner et al., 2020).

In recent years, Médecins Sans Frontières/Doctors Without Borders (MSF) has committed to adapting its operations, reducing its environmental footprint, and contributing to advocacy related to the health impacts of climate change. The organization is working toward reducing its carbon emissions by 50% by 2030 (MSF, 2022a), and has initiated a number of climate change-related activities.[1] Its next major effort in this arena will be to articulate how it plans to adapt its operations to the reality of climate change.

In light of this, the *Humanitarian Action on Climate and Environment* (HACE) Initiative at MSF Canada and Heidelberg University's Institute of Global Health (HIGH) conducted research to gather evidence on MSF's experience of the impacts of climate change and environmental degradation. The research, which forms the basis of this report, aimed to better understand adaptive responses evolving within MSF programs, and to identify opportunities to strengthen MSF's capacity to respond to humanitarian needs in the context of climate change.

This research is based on interviews with 49 MSF staff members around the world, conducted between August 2022 and November 2023. (The full methodology for this research can be viewed in Annex.) Through these in-depth interviews, the research team sought to examine the perspectives and experiences of humanitarian staff working in contexts of high vulnerability, and low adaptive capacity—also known as 'climate hotspots'—and to explore how they are adapting to climate change.

1. See, for example: The Malaria Anticipation Project, Climate Smart MSF, the Anticipation Hub, HACE's El Niño Updates and Seasonal Calendars, Luxembourg Operational Research (LuxOR) Climate, Environment & Health Structural Operational Research and Training Initiative (SORT IT), The Safe Water Optimization Tool (MSF, 2022b; West, 2022), MSF Geographic Information System (GIS) mapping, and the MSF Climate Hub.

Given poor road infrastructure, extreme weather conditions in Madagascar severely limit people's access to health centres and make it difficult for our teams to reach communities. This situation often deters people from visiting health centres before their condition worsens.
MSF/Coralie Mulliez, 27/03/2024

Chapter 1

Humanitarian Impacts

The double blow of climate change

"If we are talking about MSF's areas of intervention in Haiti, we can say that climate change and environmental degradation have a ferocious impact on our activities."

—Community Health Promotion, Haiti, Male

A child in the MSF Inpatient Therapeutic Feeding Centre in Abs General Hospital, Hajjah Governorate, Yemen, with her grandmother. Malnutrition is an ongoing health concern in Yemen, with seasonal and annual peaks. The war directly and indirectly exacerbates food insecurity. Jinane Saad/MSF, 16/08/2022

In this research, MSF staff described how climate change and environmental degradation are contributing to humanitarian crises—both by amplifying needs through rapid- and slow-onset climate events, and by making humanitarian interventions more challenging and complex to implement. In this way, climate change deals a “double blow” to life-saving humanitarian aid.

Humanitarian workers described how extreme weather events result in deaths and injuries, especially within communities living in highly exposed areas. They observed that extreme heat impacts people's health on a large scale—and especially children, pregnant women, the elderly, people living with chronic diseases, and people who work outdoors.

"A few years ago, we had a big heat wave... and it was very quick and within a day, more than 1000, 1200 people, if I'm not wrong, died because of that heat wave."

—Supply Manager, Pakistan, Male

Decreases in water availability and quality was a major concern. In addition to broader impacts on ecosystems, livelihoods, conflict and migration, MSF staff noted a connection between a decline in the quality and quantity of water, and an increase in water-borne diseases in some settings, particularly following floods or droughts. They also described how changes in rainfall patterns, coupled with temperature changes, can impact mosquito distribution, precipitating malaria or dengue outbreaks of unprecedented scale and severity.

"Dengue as a problem across Southeast Asia now is exponentially accelerating, becoming incredibly difficult to manage. The scale is something that's never been experienced before, and then the reach, so it's really in parts of the region where it wasn't ever prevalent."

—Head of Project, Australia, Male

Increases in food scarcity were widely reported by participants in the communities they serve, due to changing weather patterns, extreme weather events, displacement, and other factors. Sometimes, food scarcity was a consequence of losses of livelihoods, rather than a direct consequence of extreme weather events or slow-onset changes.

"Now eight months after the cyclone, we're seeing, in an area [where] we're not already responding, the major impacts on food security and nutrition, where this week we're launching an emergency response. The food security situation has deteriorated so much. We did a nutritional survey and found 10% SAM [severe acute malnutrition], which is three times above the alert level."

—Head of Mission, Madagascar, Male

In addition to negative consequences for physical health, MSF humanitarian workers described how climate change and environmental degradation can adversely affect mental health. They described responses ranging from anxiety and despair to suicide. Some interviewees discussed how the losses of homes and livelihoods, traumatic extreme weather events, and ecosystem destruction can all contribute to emotional distress.

"Those farmers, I can imagine they put their lives to harvest, and with so much hard work in this scorching heat…And then suddenly, a rain comes, or a flood comes, and washes all of their hard work away. So they are not left with much of a choice but suicide."

—Logistician, Pakistan, Male

Several MSF staff described the humanitarian impacts of climate change and environmental degradation in terms of lost livelihoods. They confirmed that people living in poverty, and those who rely on subsistence farming or fishing, are particularly vulnerable to such losses. A few mentioned their own or their colleagues' losses of livelihoods as a result of changes in the environment. They explained how losses of livelihoods can both drive and result from migration and conflict.

"I saw that…in PNG [Papua New Guinea] where…there was no water anymore because of El Nino. They moved to another village and there were huge fights between the villages. And I saw massacres that happened in front of my eyes. People were killed because…You know, kids were speared because they tried to take water from another community's well."

—MSF Representative, Singapore, Male

According to the humanitarian workers interviewed, limited access to resources such as food, water or cultivable land can contribute to decisions to migrate. The migration patterns discussed by participants varied widely, and included forced displacement, voluntary migration, planned relocation, and also immobility (IOM, 2019). MSF staff noted that conflict may arise in conditions of scarcity, and that conflict, in turn, can further exacerbate environmental degradation—either because environmental protection is deprioritized, or because communities might engage in coping mechanisms that have detrimental effects on the environment.

"Priorities change, my friend, eh? With war, new priorities come along. You try to keep yourself safe. Then the environment, the community protection, so we have more life matters than the environment."

—Advocacy Manager, Yemen, Male

Participants spoke of communities that had been displaced by conflict and had become more exposed to the pernicious effects of climate change and environmental degradation as a result.

"Most of the time people migrate, either because there are internal or intercommunity conflicts. They migrate precisely to leave the area, which is certainly fertile but insecure, to go to areas where there may be security and perhaps, in the long run, to establish themselves to grow crops."

—Communications Officer, Ivory Coast, Female

"In Sudan, for example, three quarters of the population are living at the poverty line. And then you have a lot of them depending on rain and weather changes to plant and to make food for their survival. This year the rain was very short—it is what I sometimes call 'climate shock'."

—Clinical Officer/Physician Assistant, Sudan, Male

MSF staff also acknowledged the disproportionate effects of climate change on particular individuals and groups, such as low-income populations, refugees and internally displaced persons, Indigenous peoples, women, and children.

The humanitarian workers interviewed noted that gender can influence how the impacts of climate change are experienced in different contexts. Frequently, MSF staff reported that women and girls were most severely affected, especially by violence. As one participant noted, women can experience heightened vulnerability to violence in the aftermath of extreme weather events:

"A woman, patient, mother was directly affected, it was in the North of Honduras in that time. She lost everything, was a single mother, she had to move to the shelters, the improvised shelters. We attended to her in the shelter but unfortunately in the shelter she faced sexual violence. She was in danger because of that."

—Psychologist, Mexico, Male

Others highlighted that gender alone was not always the defining element in the disproportionate impacts of climate change. Gender roles and societal expectations can interact with other complex factors, leading to distinct vulnerabilities and challenges.

"[In] IDP [Internally Displaced Persons] camps, for example…there's suddenly a big strain on the resources around that area where normally there are not so many. So…they [women] will need to go further and further for firewood for cooking. And that all indeed increases the risks of, especially SGBV [sexual and gender-based violence]…We did anthropological research in Benue. And women were actually saying, like, 'yeah, I rather go to the field myself, because I only get raped, but my husband gets killed.' So these [are the] kinds of decisions they are having to make…."

—Head of Mission, Nigeria, Female

In a majority of interviews, MSF humanitarian workers reported that climate change and environmental degradation are making humanitarian work more difficult, by increasing needs, and also by further complicating humanitarian interventions. Floods, for example, can degrade or demolish roads, leading to disruptions in the supply chain or rendering services inaccessible to affected populations. From a logistical standpoint, climate change and environmental degradation are making it increasingly challenging to respond to humanitarian needs quickly.

"In March [2022] there was Cyclone Gombe here, which created big problems at the community level. Some communities were isolated, and the MSF team was confined to one place…the bridges had collapsed, so we couldn't move the team from one region to another."

—Tuberculosis Program Supervisor, Mozambique, Male

In addition, MSF staff described how, more and more, they face extreme heat and pollution in the course of their work:

"…we are getting actually tired easily because of the high temperature, people cannot work longer period outside under sun."

—Supply Manager, Bangladesh, Male

Interviewees also highlighted how they and their colleagues have been personally affected by the extreme weather events they respond to as providers of humanitarian assistance:

"A work colleague lost her baby of two weeks during that flood. It was really hard. She did not manage to recover the body of her baby lost in the flood."

—Nurse/Board Member MSF East Africa, Burundi, Female

"In the same period a colleague, a driver, lost everything, he was stuck on the top of his house during the first hurricane. We lost contact with him, then we found out he was on the roof of the house after two days without water or supplies."

—Psychologist, Mexico, Male

Beyond this, climate change and environmental degradation can also negatively influence the mental health of humanitarian workers. In particular, it can provoke moral distress—negative emotions associated with being unable to follow the moral or just course of action—when they feel they are not able to do enough in the face of climate change-related disasters (Jameton, 1984; Kiddell-Monroe et al., 2018):

"If you've got hypertension, or you've got other illnesses [along with HIV], [you] need to take food before you eat. And for me, as a health promoter, I talk about eating, eating well,…eating vegetables and [a] balanced diet and all that. Then the person [is] asking, 'Where can I get a balanced diet in this situation? There is no water.…There is no rain for me to grow crops…I can't even keep livestock because there's no water for them to drink'…it becomes very sad for me."

—Health Promoter, Eswatini, Male

As one participant noted, it can be difficult for MSF to recruit and retain staff under such punishing circumstances:

"We literally struggle to get qualified doctors who are ready and willing to come to join in our project. A few doctors who came from other states, they couldn't survive, they were so flabbergasted with the environment [pollution and poverty] that they left after three or four months."

—Deputy Project Coordinator, India, Male

Chapter Summary

Participants across diverse geographic areas described the stark impacts of climate change and environmental degradation on communities and on MSF humanitarian operations. Climate change and environmental degradation, then, can be seen as both driving humanitarian needs and also as creating challenges for humanitarian operations intended to respond to those needs. This underscores the importance of improving preparedness and increasing capacity to cope with the impacts of climate change and environmental degradation, both within highly exposed communities, and within the organizations that support and provide services to them.

The double blow of climate change

Climate change and environmental degradation exacerbate humanitarian crises by:

Amplifying needs

Extreme weather events

Changing patterns of disease

Food and water insecurity

Complicating aid efforts

Logistical challenges

Harsh living and working conditions

Moral distress

Nutritional crisis in northwest Nigeria. Farmers cultivate their lands near Riko village, Katsina State, Nigeria.
George Osodi, 29/06/2022

Chapter 2

The Adaptation Gap

"Let's say an area has become arid because of drought.
People are going to find another place where they can go…
So they're adapting to survive."

—Medical Coordinator, Kyrgyzstan, Male

Children along the migration route are invited to tell the Worry Dolls (a Mayan tradition from Guatemala) about their fears and worries which the dolls absorb during the night. MSF assists migrant populations experiencing physical and mental health impacts of their journeys in Honduras, Guatemala and Mexico. MSF, 23/03/2021

The current and projected impacts of climate change and environmental degradation on health and humanitarian activities are numerous. The two recognized ways to address these impacts are reducing the emissions that cause climate change (mitigation), and undertaking measures to minimize its negative consequences (adaptation). As the impacts of climate change are being experienced today, both strategies—which are complementary and synergistic to each other—are necessary.

Climate change adaptation is "the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities" (IPCC, 2018). Humanitarian organizations, including MSF, constantly change and adapt owing to their objective of meeting the needs of people in crisis, in addition to the unpredictable nature of their work. Yet climate change adaptation is still considered a relatively new idea in the humanitarian sphere. Even so, participants in this research were challenged to identify strategies to adapt to the impacts of climate change that they are witnessing. They discussed both strategies that are currently in use ('actual' adaptation efforts), as well as measures that could be employed ('potential' adaptation efforts).

Responses about climate change adaptation were organized along a novel 'adaptation continuum' (Box 1). The continuum describes different levels of adaptation based on timeframe, as well as on different levels of vulnerability, risk and resilience. It provides a framework for understanding adaptation efforts and their stages of development, with the goal of building resilience and ensuring social, economic and environmental well-being in the face of climate change and environmental degradation. The levels of the adaptation continuum are not necessarily discrete, and approaches are context-specific.

Box 1: The adaptation continuum

When prompted to describe actual or potential adaptation efforts, MSF staff volunteered examples that varied broadly in terms of the timeframe within which they are implemented ('timing'); the degree of vulnerability of the individuals or groups involved ('vulnerability'); and the effect of the adaptation effort on climate-related risk ('risk'). Drawing on existing literature (Schipper, 2020), responses were used to develop the 'adaptation continuum'. The continuum describes different levels of adaptation based on these three parameters. The levels are:

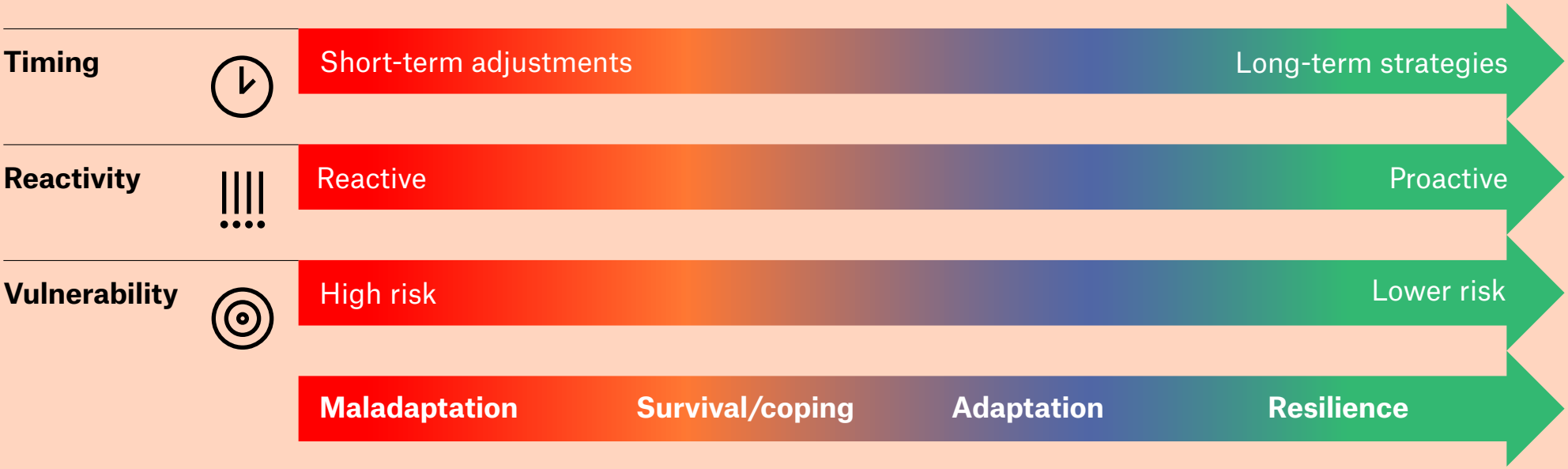
Maladaptation: Actions or strategies that, despite aiming to address climate change impacts, unintentionally exacerbate vulnerability or create negative consequences. Maladaptation involves misguided or poorly-planned efforts that may lead to increased risks or reduced long-term adaptive capacity. Maladaptive outcomes can also be the result of inaction (Schipper, 2020).

Survival and coping: Actions to deal with the immediate consequences of climate change. Survival represents the basic instinctual response to protect life and meet immediate needs during a crisis, often driven by urgent and short-term considerations. It involves emergency measures such as the provision of shelter, food, and water during extreme weather events or disasters. Coping strategies are short-term adjustments made to reduce risks and manage the impacts of climate change.

Adaptation: Deliberate measures to adjust and prepare for anticipated or observed climate-related impacts. Adaptation entails developing strategies and implementing actions to reduce vulnerability and increase resilience to such impacts. Adaptation efforts aim to address the underlying causes of vulnerability and build capacity to withstand and recover from climate-related shocks. It involves incorporating climate considerations into decision-making processes, implementing climate-responsive policies and strategies, and adopting technologies and practices that are better suited to changing conditions.

Building resilience: Transformative actions aiming to strengthen systems, institutions, and communities to withstand and thrive in the face of climate change. Building resilience encompasses a multi-dimensional approach that strengthens social, economic, and ecological systems to better absorb shocks, adapt to changes, and sustain well-being.

Figure 1: The adaptation continuum



Actions that aim to address climate change, but unintentionally cause harm.

Actions that aim to meet the immediate needs and protect lives from the impacts of climate change.

Deliberate, proactive measures to adjust and prepare for the observed and anticipated impacts of climate change.

Comprehensive and transformative actions that strengthen systems, institutions and communities to withstand and thrive in the context of climate change.

When asked about the ways in which individuals, communities, and MSF were adapting to the impacts of climate change, most MSF staff struggled to answer. Some suggested existing or possible mitigation activities instead. Others described the absence of adaptation efforts. The research team generally had to urge participants to identify potential adaptation efforts when such efforts were not being observed.

Most participants focused on the 'maladaptation' and 'survival and coping' levels of the adaptation continuum, and described the two higher levels ('adaptation' and 'building resilience') as emergent or largely aspirational. Maladaptation on the part of individuals and communities was reported in a few interviews, particularly in conflict-affected areas:

"In the case of Benue [State, Central Nigeria]…sometimes [people] cut down the trees to sell and to get money and it leads to deforestation."

—Health Promoter Supervisor, Nigeria, Male

Some participants described MSF as similarly engaging in short-term measures to reduce risks, without necessarily addressing the systemic forces behind them. In some cases, those efforts threatened to inadvertently make environmental degradation worse:

"In Mozambique, people were moving from one place to another place [after the cyclones]. I had to send them a shelter, food, hygiene kit…this was causing plastic pollution, all this because they were one time using and nobody cares about recycling and all this."

—Supply Chain Coordinator, Ukraine, Female

MSF staff described examples in which communities worked to ensure survival and to cope with the impacts of climate change. Although a demonstration of resourcefulness and ingenuity, these measures were short-term and reactive in nature:

"Here in Sana'a…because it's a mountainous area, the flood comes from upstream. The people who are living up when this flood starts, they call the people who are down and warn them…If they didn't leave that street immediately, they will definitely drown."

—Water and Sanitation Manager, Yemen, Female

"…[Women] are rearing the buffaloes because buffalo milk is the only source of something liquid to hydrate themselves. So they use the locally made yogurt to drink during the daytime to keep themselves hydrated."

—Advocacy Manager, Somalia, Female

When asked about their perspectives on MSF efforts to build resilience, participants shared a diverse set of responses, including challenging whether supporting resilience-building was part of MSF's mandate as an emergency humanitarian organization, and querying whether it moves too far into the development realm. While some humanitarian workers had observed resilience-building in their communities, many wanted to see more such action:

"We are trying to cope [with] the problem. And finally, we have to increase our response. So it's kind of chronic and acute disease. It's an acute response after a flood or before a flood or before the cyclone. We have to respond. We have to improve the forecast system. We are trying to do that. And a long-term response, we also need after the flood—the sustainable development. We can introduce the architecture…to actually cope with this kind of extreme weather condition."

—Occupational Health Officer, Bangladesh, Male

Chapter Summary

The humanitarian workers interviewed struggled to describe actual and even potential ways of accelerating climate change adaptation, at the individual, community, and organizational levels. Many MSF staff spoke of mitigation more easily than adaptation, and suggested existing or possible mitigation strategies instead. When discussing adaptation, most interviewees focused on efforts situated on the 'maladaptation' and 'survival and coping' levels of the adaptation continuum. This suggests that activities to support adaptation within MSF programs, and in the communities in which it works, are still preliminary, ad hoc and reactive in nature.

Awareness of the impacts of climate change and environmental degradation is high among participants in this research (see Chapter 1). However, despite these weighty consequences, implementation of adaptation measures within MSF, and within the communities in which it works, remains low. This reflects a broader 'adaptation gap' wherein global climate change adaptation efforts fall short, considering the current and anticipated impacts of climate change (UNEP, 2022). This 'adaptation gap' represents an opportunity to more strategically and systematically integrate measures supportive of adaptation and resilience, like the ones discussed by participants in the next chapter, into public health and humanitarian response.

Malaria: Indoor residual spraying (IRS) and mass drug administration (MDA) campaigns at Angumu in Ituri, Democratic Republic of Congo. A team sprays insecticide to reduce Anopheles mosquito populations in the Angumu health zone.
MSF/Charly Kasereka, 19/07/2022

Chapter 3

‘Expanding Our Vision’

Adaptation and building resilience

“Hopefully, we are transforming and expanding our vision of health to see it as something that is not only a biological function…that would allow us to see factors [that] we should work on.”

—Psychologist, Colombia, Female

MSF medical team accompanied by health promoters are deployed once a week in the village of Rendel, a dozen kilometres north of Port-à-Piment, Haiti.
MSF/Alexandre Marcou, 09/02/2023

Humanitarian workers described efforts—actual and potential—to address the impacts of climate change experienced in humanitarian programs. These responses fell into four categories: 'Knowledge and awareness', 'Infrastructure and technological solutions', 'Operational adaptation', and 'Policy and advocacy'.

Knowledge and awareness

Most interviewees called for education, awareness-raising, and capacity-building activities for other humanitarian workers on the consequences of climate change and on adaptation and mitigation efforts. They saw this information-sharing as potentially motivating staff to make efforts to reduce the organization's (and their own) environmental impacts. In addition, they wanted to see MSF invest in such information-sharing and capacity-building activities to empower staff to effectively respond to climate change-related health challenges.

"I do think there is a huge gap for information dissemination people need…to understand, because even myself, I am within MSF. I do read a couple of things on climate change on humanitarian responses and climate change, but I cannot really say I fully understand the impacts of climate change on our society."

—Communications and Advocacy Manager, Eswatini, Female

"We need to develop expertise in people so that they understand what it is, how to address it, how to monitor it, how to collect the data. So, there is a lot of training to be done before expecting the missions to be able to react and make proposals."

—Board Governance Coordinator, Ivory Coast, Female

MSF staff also viewed behaviour change communication vis-à-vis the community as being important for both environmental protection and for public health. One health promotion officer describes championing such a campaign with her team in Cameroon:

When I see somebody burning a waste product and polluting the air, they don't understand the impact on the health. So we took upon ourselves to educate these communities, the role of an informant and an educator."

—Health Promotion Officer, Cameroon, Female

Infrastructural and technological solutions

Participants emphasized the need for MSF to enhance its climate resilience through infrastructural and technological advancements. They endorsed designing and constructing health facilities that are both environmentally sustainable and are prepared to respond to climate-related health threats. They shared ideas for such infrastructural improvements, most of which were aspirational rather than concrete:

"In the pharmacy—how can we ensure a good and continuous level of temperature for medicines, vaccines[?] Heat has been an issue in our pharmacy and in the operating theatre."

—Health Advisor, Central African Republic, Female

Some humanitarian workers underscored the complementary nature of adaptation and mitigation efforts. While acknowledging the progress made by the organization on mitigation, they also emphasized the need for MSF to step up efforts around paper and plastic waste reduction, recycling and the use of renewable energies. MSF staff often asserted that individual mitigation efforts are insufficient, and that a strengthened response would come from the upper levels of the organization. Some even envisaged MSF supporting mitigation efforts beyond the organization:

"We want to encourage setting up sustainable health centres, sustainable dispensaries, whereby we have proper water catchment systems within the hospitals. We want to make use of sustainable energy, solar energy."

—Evaluation Manager, Kenya, Male

Infrastructural and technological solutions

Some MSF staff hoped to see the organization take a more active role in the provision of renewable energy infrastructure, waste management infrastructure, water and sanitation services, and climate-resilient buildings in the community. An interviewee in Indonesia described a scenario in which MSF teams are offering such support in rehabilitating and maintaining environmental health infrastructure:

"The government [has] the open defecation-free program because they can see that they used to consider the river is their backyard…now the government is revitalizing the riverbanks. So, the riverbanks…that is their front yard. So you cannot put your latrines in your front yard. And by doing that, they are also building proper public latrines. This is what we're exploring if they need support in terms of latrines, public latrines, or clean water."

—Deputy Medical Coordinator, Indonesia, Male

Many interviewees viewed technological advancements as potentially contributing to reductions in paper use through digitization, and as creating conditions favourable to the wider use of renewable energies:

"We're also emphasizing on use of solar power in the facility. The logistics department has informed the team to bring the new technologies available in that regard. So we're slowly changing to more environmentally friendly technologies rather than depending completely on diesel-dependent generators."

—Water and Sanitation Manager, Bangladesh, Male

However, some alluded to barriers in access to such technologies for certain populations:

"Most of the people in very far-flung areas do not have great connectivity. Or even if they have [connectivity], but it is very bad…most of the time electricity is missing. So they go for a solar panel with a DC fan connected to it. So they are using those strategies, like a…wet towel on their heads. Also, doing the mitigation techniques locally."

—Logistician, Pakistan, Male

Operational adaptation

MSF staff urged proactive measures against climate-related health threats, and more interventions on the 'adaptation' and 'building resilience' levels of the adaptation continuum. Early warning and anticipatory action were frequently evoked as being necessary to better respond to extreme weather events and outbreaks. Early warning systems can help detect, monitor, and mount responses to climate-related health risks in a timely manner. Some MSF staff described existing preparedness initiatives, and how they have enabled early and rapid mobilization of medical and other resources. However, interviewees also asserted that more could be done within this emerging area,[2] particularly through scenario planning, partnerships with other organizations, and anticipatory action.

"I think we've got the opportunity to…refine our way of working. In Madagascar for example, collaborating with Health in Harmony and doing data driven e-prep [emergency preparedness]…and surveillance, not just for infectious diseases, but of things like rainfall or crop yields, and food insecurity and malnutrition, rather than waiting for the kids with severe acute malnutrition to start turning up."

—Doctor, Switzerland, Male

Other respondents saw potential in nature-based solutions, which use nature and ecosystems to address climate change-related challenges and promote adaptation and mitigation. They discussed planting trees to combat deforestation, and sustainable practices related to waste management. While some such initiatives had already been implemented, there was a shared feeling that more could be done.

"My team has been able to do an aggressive planting of trees, that the place is becoming more green. And is aware of supporting climate change."

—Environmental Health Manager, Nigeria, Male

2. Early warning and anticipatory action are considered 'low hanging fruit' for climate adaptation to protect health and populations by the World Health Organization and World Meteorological Organization; yet up to one half of the world do not yet have access to early warning systems or tools. The United Nations has called for a global effort to ensure that every person is protected by early warning systems by 2027, and launched the Early Warning For All Initiative in 2023 to this end.

Operational adaptation

Several participants suggested that, in order for MSF to be able to respond to humanitarian needs now and in the future, it must change its way of working. Viewpoints varied on what needed to change. However, participants agreed that MSF is already adapting, and should continue to adapt, working more closely with communities and other actors, and more consciously considering how it can assist people in the context of climate change.

"In MSF, hopefully, we are transforming and expanding our vision of health to see it as something that is not only a biological function. It has to do with our existence in the world and in the universe…I think that would allow us to see factors associated with health that we should work on."

Psychologist, Colombia, Female

Policy and advocacy

Beyond programs and interventions, respondents felt that there was an urgent need for MSF to address climate change at the policy level. Many were aligned with the organization's commitment to 'bear witness' (témoignage), including through advocacy on, for example, the health impacts of climate change and environmental degradation, or on compensation to the worst-affected communities for climate change-induced losses and damages. Respondents highlighted that MSF's voice is listened to and respected, hence the need to make use of it on the topic of climate change:

"We have a level of credibility. It would be strange if we were not more vocal on this issue. We have the possibility to demonstrate how adaptation could be done."

—Health Advisor, Central African Republic, Female

Participants also underscored the social justice dimensions of climate change, and viewed these as a powerful rationale for implementing mitigation efforts, accelerating adaptation efforts, and advocating vis-à-vis those most responsible for climate change and its concomitant losses and damage.

"For mitigation, for me, it's good to have the climate footprint and to see advocacy to work in starting fuel consumption advocacy…But for our advocacy we should go directly to the main actors that are producing this [climate crisis]. Our target should be that."

—Psychologist, Mexico, Male

Chapter Summary

The types of responses to climate change impacts described by participants demonstrate that MSF humanitarian teams and the communities in which they work are starting to adopt measures geared toward adaptation. However, this is generally taking place in a limited, reactive, and ad hoc fashion. Looking ahead, MSF can help to reduce the adaptation gap by more strategically and systematically integrating adaptive measures into its humanitarian operations.

As some MSF staff noted, MSF could also consider offering support to communities and local organizations in developing their own strategies to adapt and increase resilience to the impacts of climate change. However, this was not a universally agreed-upon point within this dataset (see Chapter 2). Nonetheless, adaptative measures are indeed compatible with the objectives of humanitarian response—to save lives and alleviate suffering in crisis. As such, adaptation does not necessarily require compromising on organizational identity or shifting away from humanitarian response toward more of a development focus.

Noting that the adaptation gap has been observed globally and across sectors (UNEP, 2022), these findings may also prove useful for other humanitarian organizations and actors involved in the response to climate change and in adaptation planning, financing and implementation, including national governments, non-governmental and multilateral organizations, and health systems (UNEP, 2022). Indeed, actual and potential adaptation efforts discussed by participants represent feasible and potentially replicable adaptation options for other organizations. These are summarized in the Adaptation Matrix, seen below (Figure 2).

Figure 2: The adaptation matrix

	Maladaptation	Survival/coping	Adaptation	Resilience
Knowledge and awareness 	Recruit, train, and develop MSF staff using a purely biomedical model of health, without consideration of climate change and mental health.	Lead a targeted awareness-raising campaign about the immediate health risks associated with extreme weather events.	Conduct internal MSF trainings on climate change and health as part of inducting new staff and developing existing staff.	Partner with the Ministry of Health and the Ministry of Environment to identify learning needs for the health workforce on climate change and health.
Infrastructural and technological 	Build a temporary medical clinic in a flood plain, leading to repeated damage.	Provide temporary medical clinics and distribute emergency medical supplies after a disaster.	Introduce low-carbon solutions to control temperatures in pharmacies and clinical areas with projected temperature increases in mind.	Partner with another NGO to implement an ecosystem restoration project in a setting where MSF is likely to be based for an extended period, with an aim to regulate temperature, reduce air pollution, and reduce flood risk.
Operational adaptation 	Implement a medical program that relies heavily on diesel-powered generators in a region experiencing prolonged heat waves, despite other energy options being available.	Respond to outbreaks of climate-sensitive diseases as they occur.	Establish early warning systems, and improve disaster response and anticipatory action protocols.	Contribute to the development of climate-resilient and sustainable health systems in health care facilities that MSF supports.
Policy and advocacy 	Overlook climate change as a driver of migration in an advocacy strategy on migration.	Respond reactively and in an ad hoc manner to requests from other humanitarian actors to engage in collective climate advocacy efforts.	Recognize changing patterns of vector-borne diseases, and collaborate with local health authorities to develop and implement a comprehensive vector control strategy.	Develop a long-term advocacy strategy for climate action to urge governments to invest in mitigation and adaptation and compensate states for loss and damages related to climate change.

The Ikongo district in Madagascar is often hit by extreme weather conditions and cyclones, further limiting people's already restricted access to health care. MSF/Coralie Mulliez, 27/03/2024

Conclusion

“We are adapting by force…there’s no turning back. I think the question is one of speed. How fast are we still going? That's what we can work on.”

—Psychologist, Colombia, Female

Humanitarian workers are witnessing clear and profound impacts of climate change and environmental degradation on communities and humanitarian programs worldwide. In this research, MSF staff described how climate change is both multiplying humanitarian needs and complicating responses intended to address those needs. But while the impacts of climate change are great, the implementation of measures to adapt the organization to this changing reality – and to support adaptation within communities – lags behind. This reflects an 'adaptation gap' observed at the global scale (UNEP, 2022), wherein current efforts to adapt to climate change are inadequate.

In addition to shedding light on the problem of the adaptation gap, this research also points toward solutions. MSF humanitarians discussed both actual and potential strategies that support community and organizational adaptation and resilience-building. Their insights revealed that while adaptive activities are being implemented by MSF teams, these efforts are generally modest, reactive, and ad hoc. In general, the MSF staff interviewed were motivated to act, and called for more support in implementing, evaluating and scaling up measures geared toward adaptation.

Despite some progress in implementing such measures, many communities and organizations remain vulnerable to the increasing risks presented by climate change and environmental degradation as a result of the adaptation gap. This shortfall between needs and response reflects the need for more ambitious and comprehensive action to reduce risk, enhance preparedness, and protect people and communities from the negative effects of climate change (UNEP, 2022). As the participants in this research have noted, that gap can be reduced with strategic and systematic efforts to adapt and build resilience within communities. Drawing on their contributions, we make the following suggestions to decision makers, researchers, and practitioners in the humanitarian, public health, and governance sectors:

1. **Scale up support for adaptation efforts in climate hotspots:**
   The burden of climate-related health risks, as well as the capacity to adapt to them, are unequally distributed globally. To safeguard populations most vulnerable to the impacts of climate change, adaptive activities are urgently needed, especially in areas experiencing conflict and political instability. These efforts should, at a minimum, avoid maladaptation, and should be accompanied by increased international support and investment. For humanitarian actors, a focus on adaptation does not necessarily mean compromising on organizational identity or a shift toward development work; adaptation can be built into the "core business" of providing timely, responsive humanitarian assistance.

2. **Increase mitigation efforts, as a complementary strategy:**
   Alongside adaptation, urgent action is needed to mitigate further environmental destruction and worsening humanitarian impacts by reducing greenhouse gas emissions. In addition to maximizing the environmental sustainability of health infrastructure and humanitarian responses, bold advocacy can help the world to stay under 1.5°C of warming.

3. **Measure and report on the adaptation gap:**
   At the global level, robust mechanisms for measuring and reporting on unmet health and humanitarian needs in climate hotspots should be established. Measures to minimize emissions, reduce risk and boost resilience should be developed, implemented and evaluated, and the findings of these evaluations may be shared to enhance scale-up efforts.

4. **Contribute to loss and damage dialogue:**
   There is a need to better understand the short- and long-term health impacts of climate change in the most affected regions, including conflict-affected settings. Efforts should be made to empirically quantify and qualify health-related loss and damage, and to use this information to ground global discussions on loss and damage.

MSF's emergency response team travelling by boat to reach a village in Johi Town that is still cut-off by the water. The MSF team has set up a mobile clinic for flood-affected communities in Johi Town, Dadu district, Pakistan. Zahra Shoukat/MSF, 26/09/2022

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Overview: This research employed a qualitative methodology to gain in-depth perspectives from 49 MSF humanitarian workers across 30 countries, representing both headquarters[3] and program sites.[4] The goal was to explore their insights into the impacts of climate change and environmental degradation on health in their contexts, and adaptive responses observed, implemented by MSF as well as by the community.

Study design: The research methodology began with a scoping literature review and protocol development. Ethical approval was obtained from the MSF Ethics Review Board. The approach aimed to lay the groundwork for subsequent quantitative or mixed-method approaches. Stratified purposive sampling concentrated on regions highly affected by climate change and environmental degradation, utilizing reference tools (Germanwatch, 2021; University of Notre Dame, 2021). Criteria for participation included at least two years of experience in the context discussed in the interview and an interest in climate change and environmental degradation. The study prioritized a balanced representation of age and sex, and diverse disciplinary perspectives, with a particular emphasis on locally hired staff. Interviews were conducted with 49 MSF staff, comprising 71% men and 29% women, from varied professional backgrounds across 30 countries.

Data collection: Semi-structured interviews were conducted online, over the telephone, and in person, utilizing five languages. The research team employed artefacts and deliberative interviewing to collect detailed data, focusing on co-constructing knowledge.

Data Analysis: Framework analysis was employed for systematic qualitative data analysis, organizing and categorizing data based on predefined themes or concepts. Qualitative analysis involved iterative cycles of data familiarization, framework development, coding, indexing, charting, summarizing, interpreting and reporting. The overarching questions addressed the impacts of climate change and environmental degradation on health, community adaptation, and the adaptability of MSF's humanitarian operational response.

3. Headquarters – Denotes the central administrative centres of the organization. Although increasingly decentralized, headquarters refers broadly to MSF's operational centres, or where actual programs are not located.

4. Program sites – Otherwise known as "the field," as in not in the lab, not in headquarters; the actual sites or locations where MSF humanitarian programs are carried out and services are provided.

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