

The Lancet Countdown on Health and Climate Change

Policy brief for Médecins Sans Frontières

2023



Preserving Health in an Era of Loss and Damage: A Medical Humanitarian Perspective

Introduction

Most of the over 70 countries Médecins Sans Frontières /Doctors Without Borders (MSF) works in are in lower-income regions. They are facing not only humanitarian crises but also the most severe impacts of the climate emergency. In 2023, MSF continued to witness and respond to the consequences of extreme weather events around the world, including unprecedented flooding in South Sudan, severe cyclones in Myanmar and Madagascar, and the relentless heat and extended droughts that have driven millions to the edge of starvation throughout the Horn of Africa.¹ This year, the organisation has also responded to epidemics of climate-sensitive diseases, including multiple concurrent cholera outbreaks and the rise of dengue and malaria in several areas, including in conflict-affected settings.

In a time of polycrisis,² a simultaneous occurrence of multiple catastrophic events, MSF and other aid organisations are already struggling to meet the rising health and humanitarian needs. If human activities contributing to climate change and environmental degradation go unabated and unaddressed, including the continued dependence on fossil fuels, these needs will only

escalate. With each fraction of a degree of global temperature rise, there will be further limitations on adaptation, and reckless losses and damages to lives, livelihoods, and general well-being.

Drawing on evidence from indicators in the [2023 Report of the Lancet Countdown on Health and Climate Change](#),³ MSF builds on previous experiences and messages with a focus on three key areas: MSF's ongoing efforts to reduce its environmental impact; the challenges of adapting emergency humanitarian operations in a rapidly warming world; and the consequences of climate change when the capacities of communities to adapt are surpassed.



MSF is developing a solar energy rapid deployment kit that can be installed on the roof of tents commonly used in emergency responses, with the capacity to supply 9 kWh/day of electricity.

Recommendations

These recommendations propose actions that impact the ability of humanitarian organisations like MSF to operate in and respond to the climate crisis. The following recommendations are aimed at:

NATIONAL AND INTERNATIONAL BODIES:



There is an ever-growing urgency to place health firmly and decisively at the forefront of climate policies, negotiations, and actions. Health sector priorities should be more prominently reflected in national adaptation plans (NAPs) and country vulnerability assessments.



The burden of climate health risks and impacts, and the ability to adapt to these, are not equal. To help break the cycle of exclusion of those most vulnerable to these impacts, adaptation action in contexts of conflict and instability is urgently needed. These efforts must be accompanied by increased international support and investments in equitable health adaptation.

LOSS AND DAMAGE NEGOTIATIONS:



Health impacts of climate change must be built into the design of response and funding mechanisms for loss and damage.



Action on loss and damage must be coherent and complementary with health and humanitarian assistance, and disaster risk reduction efforts. It must avoid working in silos, adopt the learnings from these sectors for efficient and equitable operations, and not jeopardise existing channels of assistance through the displacement or duplication of resources. A coherent approach is essential for an effective climate response that protects health globally and addresses the needs of the most vulnerable.

Do no harm – Mitigating the Humanitarian Model

Increasingly faced with a climate emergency and the urgent sense of responsibility to mitigate its own harmful environmental practices, MSF has begun to review and adapt its modus operandi in the past few years to reduce its carbon footprint and avert further harm to the communities MSF works with and assists.

The journey towards becoming an environmentally responsible organisation has not been straightforward, however. MSF provides health care largely in remote and conflict-affected environments where infrastructure, reliable energy sources, and waste treatment options are lacking. In these settings, MSF must often set up whole new systems instead of tapping into existing ones.

MSF was created to deliver emergency medical assistance in such environments and was designed to send in staff and supplies in a fast and effective manner. This model of humanitarian aid delivery has allowed the organisation to support millions of people affected by conflict, epidemics, disasters, or exclusion from healthcare over more than 50 years. However, it heavily relies on fossil fuels, a practice no longer well aligned with the medical ethical principle of “do no harm.” Undoing such reliance has posed challenges and tensions between reducing carbon emissions and maintaining the capacity to provide medical humanitarian assistance.

While MSF still has a long way to go, progress has been made. The organisation has committed to three key and time-bound actions:⁴ A carbon target to reduce emissions by 50 percent by 2030 from a 2019 baseline, the development of roadmaps showing how each MSF office is tackling its emissions, and annual reporting on progress to meet MSF’s global carbon target.

RENEWABLE ENERGY IN EMERGENCY SETTINGS

Energy sector interventions to phase out fossil fuels and increase renewable energy generation have the potential to deliver transformational health benefits, reduce energy povertyⁱ, and deliver energy to off-grid areas. However, renewable investment is unequally distributed. New *Lancet* Countdown data shows that despite plentiful renewable energy resources, clean renewables accounted for just 1.0% and 0.4% of the energy supply in Africa and Small Island Developing States in 2020, respectively, compared with 2.4% in North America, 2.7% in Asia and South and Central America, 3.0% in Europe, and 6.0% in Oceania (**indicator 3.1.1**).³

MSF has been using solar energy in hospitals for several years, as an example of how renewable energy can provide tangible health benefits to communities. The installation of solar systems in health facilities in Sudan, Haiti, and Burkina Faso in 2023 has improved the resilience of the power supply in these insecure contexts.

MSF is also developing a solar energy rapid distribution kit that can be used in emergencies. It was designed in cooperation with MSF’s emergency team in the Democratic Republic of Congo (DRC) and can be used whenever aid must be offered quickly, and where there is a lack of reliable energy from an electrical grid. The kit includes solar panels that can be installed on the roof of tents commonly used in emergency responses, with the capacity to supply 9 kWh/day of electricity. This energy use was calculated based on MSF emergency team’s most common interventions in DRC, including cholera outbreaks, emergency vaccinations, and ambulatory clinics. The solar panels are easy to install and transport, even on the back of motorbikes. The kit will be tested in the DRC in 2024.

ⁱ Energy poverty is the lack of access to electricity, and/or clean cooking fuels or technologies.

The Limits of Adaptation

While there is still time to act to mitigate further warming, the planet is currently on a grave trajectory.⁵ The 2023 *Lancet* Countdown report states that current policies put the world on track to 2.7°C of average heating by the end of the century, with the 1.5°C limit laid out in the 2015 Paris Agreement likely to be breached within five years.³ This raises critical questions about the nature and feasibility of adaptation measures, especially in a world that continues to rely heavily on fossil fuels.

Strategically, adaptation must ensure readiness and emergency preparedness for difficult-to-predict moments of extreme climate-related events, but it must also be formulated with long-term trends in mind. In low-resource settings, there is limited support for studies on adaptation solutions to climate-related stressors, meaning that there is limited scientific evidence to guide best practices in the places where MSF and other humanitarian organisations work.

Global pledges for adaptation severely lag behind actual needs, largely due to a lack of delivery on commitments by high-emitting countries which stops plans from becoming actions. Furthermore, people living in politically unstable and conflict-affected contexts who need the most support in putting adaptation into action receive the least financial support,⁶ largely because of the risk-averse and inflexible nature of climate finance.

For example, South Sudan, a country beset by intermittent conflict, has received only 1% of the funding⁷ required to meet adaptation targets in its nationally determined contributions plan, its five-year roadmap for reducing emissions and adapting to climate, required under the Paris climate accords. This neglect leaves communities exposed to the unmitigated impacts of climate change on top of political instability. MSF is working with communities to prepare for such threats in the hopes of preventing further loss and damage of lives, homes, and livelihoods.

MSF teams are already witnessing how communities who are living in a state of chronic emergency are struggling to adapt to climate-related threats, whether extreme weather events or climate-sensitive disease outbreaks, much less build resilience before the next crisis.

Prioritising people's health is essential in pushing countries to adequately prepare for current and future climate-related challenges. On a national level, health sector priorities should be more prominently reflected in national adaptation plans (NAPs) and country vulnerability assessments. However, these efforts must be accompanied by increased international support and investments in equitable health adaptation to prevent exacerbating global health inequities that leave vulnerable countries largely unprotected. At the same time, ambitious mitigation is imperative to keep it within the limits of what health systems can adapt and respond to.

RISING TIDES, RISING CRISES: SOUTH SUDAN'S NARROWING WINDOW FOR CLIMATE ADAPTATION

“We are facing two choices now: to dyke or to die”

-Elder from Leer, Unity State, South Sudan

In South Sudan, unpredictable seasonal changes and recent floods of unparalleled magnitude and duration have been wreaking havoc on communities already suffering from political instability and poverty. Areas that have served as agricultural and grazing grounds for centuries have been transformed into marshlands by persistent flooding. A sizeable proportion of the population has been permanently uprooted, losing both their homes and livelihoods. The past four years have seen the worst flooding of the young nation's history.

These climatic shifts have led to alarming health and humanitarian consequences: People in South Sudan are grappling with acute food insecurity, seasonal malaria incidence has escalated in flood-affected areas, while outbreaks of water-borne diseases like cholera and hepatitis E have become more frequent. Furthermore, the floods are impeding access to crucial health services.



Families heading to dry land in Bentiu, Unity State, South Sudan. Across Unity State, people's homes, crops, as well as health facilities, schools, and markets, are completely submerged by floodwaters.

Photographer: Sean Sutton

Date taken / Date Recorded: 01/12/2021

MSF, one of the main healthcare providers in the country, is responding to this evolving and unpredictable situation. While grappling with the increasingly dire health consequences of the floods, the organisation is also developing novel adaptation approaches. To allow for uninterrupted access to medical services, MSF teams have shifted away from facility-based health services towards community-level models of care over the past few years. They have also organised distributions of canoes to ensure that pregnant, sick, and injured members of the community have a way to reach health services during flooding.

To combat the surge in malaria cases, MSF has initiated large-scale seasonal malaria chemoprevention campaigns. It is also testing innovative strategies to predict disease spikes through the Malaria Anticipatory Project⁸ and is documenting the results. Furthermore, by collaborating with various partners, MSF is enhancing its flood prediction capacities.



Community members in Dentiuk village, Akoka County in Upper Nile State, South Sudan, look at a canoe donated by MSF. Dentiuk is one of the villages where MSF distributed canoes to support the community in transporting the sick to the hospital during flooding.

Photographer: Paul Odongo

Date taken / Date Recorded: 31/05/2023

FIGHTING DENGUE WITH MOSQUITOES IN HONDURAS

“Emergency thresholds are reaching alarming levels and current prevention methods fall short of protecting people from dengue. It’s time for a change.”

-Edgar Boquin, MSF project coordinator in Honduras

The worldwide increase of arthropod or insect-borne viruses (arboviruses) is a long-term threat to which healthcare organisations like MSF must adapt. Arboviruses, such as dengue and chikungunya, occur mostly in tropical and subtropical areas. Dengue is the most common and concerning, with over 3.9 billion people estimated to be exposed to the disease globally.⁹ The geographic range of dengue fever is expected to expand further in the coming decades due to climate change, population growth, urban densification, and other factors related to globalization, meaning the exposed population will likely increase by another billion.¹⁰

Dengue is endemic in Honduras, where more than 10,000 cases are reported each year,¹¹ with the transmission potential having increased significantly in the latest decade (**indicator 1.3**).¹² Traditional vector-control methods using chemical products are declining in their effectiveness due to increasing resistance in mosquito populations. Since 2010, MSF has intervened seven different times in response to dengue outbreaks in Honduras.

With the aim of identifying better and more sustainable solutions, MSF and the Honduran Ministry of Health are undertaking new vector-control studies in the country. One such study, the *Wolbachia* pilot, is a mosquito population replacement method. The wild mosquito population of a district of Tegucigalpa is being replaced with native mosquitoes inoculated with the *Wolbachia* bacteria. In previous studies conducted in other endemic settings, *Wolbachia* has been proven to reduce the transmission of dengue by up to 95%.^{13,14} Furthermore, the method appears to be environmentally safe, self-sustaining (at least for a period of several years), and cost-effective.^{15,16}



Mosquitoes have four stages in their life cycle: egg, larvae, pupa, and adult. Here you can see hundreds of larvae that in the next few days will become adults to be released.

Photographer: Martín Cáliz

Date taken / Date Recorded: 15/08/2023



Julia López is one of the volunteers who agreed to place a jar containing the *Wolbachia* mosquito eggs in her home. Julia explains to Alex, an MSF health promoter, that a tree would be the ideal location to place the jar.

Photographer: Martín Cáliz

Date taken / Date Recorded: 14/08/2023

Loss and Damage: Integrating Health and Equity while Safeguarding Humanitarian Action

“Humanitarian organisations are already struggling to cover the scale or scope of needs resulting from the compounding impacts of climate change today and will struggle to respond to future crises, expected to be more frequent and severe. We all need to play our roles in adapting, mitigating, and responding to loss and damage today in the hopes for a preferable future.”

Dr. Maria Guevara, MSF International Medical Secretary

Without crucial action on mitigation, people will increasingly face unavoidable harms resulting from climate change that will go beyond what they can adapt to,³ referred to in UN climate negotiations as ‘loss and damage’.¹⁷ At recent global conferences, governments have agreed to establish dedicated mechanisms to help climate-vulnerable countries manage those harms, such as the Loss and Damage Fund and the Santiago Network for Loss and Damage. In the leadup to COP28 in Dubai, UAE, decisions will be taken on the design of these new mechanisms that will have important implications for health systems and for humanitarian response.

Unfortunately, debates about what counts as loss and damage have so far stalled much-needed action to respond to it. One of the issues is that compensation for loss and damage through these mechanisms is based on estimates of cost. Assigning a dollar value to material losses, like that of crops, homes, and infrastructure, is relatively straightforward, but less obvious regarding losses like livelihoods, culture or health.

MSF’s teams witness how extreme weather events such as floods, drought, cyclonic storms, and slow-onset climate-related phenomena such as rising sea levels, groundwater depletion, and desertification, carve direct and indirect paths to ill-health. While it is impossible to assign a precise dollar value to the impacts of illness and injury on human lives, they do have economic implications, not least in terms of health care and humanitarian costs. The challenge in quantifying health loss and damage has unfortunately led to health left insufficiently addressed in negotiations.

An awareness of the health impacts of climate change must be built into the design of response and funding mechanisms for loss and damage. Otherwise, climate-vulnerable countries will be left to grapple with the considerable health-related impacts of climate change without support from the countries most responsible for global carbon emissions.

For loss and damage response mechanisms like the Santiago Network to deliver results, they must include affected communities, both in their conception and in direct access to funds.^{3,18} This is vital to avoid exclusion, especially for the millions of people living in areas where governance is weak, where there is active conflict, or that are not under government control.

Furthermore, it is important to ensure climate action is coherent and complementary across loss and damage mechanisms, the provision of health and humanitarian aid, and disaster risk reduction efforts. Otherwise, there is a risk of working in isolation and of further destabilising humanitarian lifelines which currently support some of the world’s vulnerable communities.

CLIMATE CHANGE CONTRIBUTES TO MALNUTRITION IN HADJER LAMIS PROVINCE, CHAD

Climate change has contributed to acute food and water insecurity for millions of people. Sudden losses in food production and access to food, compounded by decreased diet diversity, have increased malnutrition in many communities, and have had an outsized impact on vulnerable groups.¹⁹ *Lancet* Countdown 2023 data indicates that globally, in 2021, 127 million more people experienced moderate or severe food insecurity compared to a 1981-2010 baseline (indicator 1.4).³

Chad is one of the countries most affected by the impact of climate change and environmental degradation but continues to be almost invisible in terms of international attention. The country is experiencing rising temperatures and unpredictable precipitation, including droughts and floods, affecting people's harvests and access to water.



This is the second time that Mariam Abdoulkarim's baby has been diagnosed with malnutrition. He had already been treated in the ambulatory therapeutic feeding unit for severe malnutrition in Massakory, Chad, and recovered. But the child fell ill once more, and the screening test revealed that he was again suffering from malnutrition. "The harvests have not been good because of climate change, we have nothing to eat, and I have nothing to feed my baby," she says, "and that's why he's suffering from malnutrition for the second time."

Photographer: Johnny Vianney Bissakonou
Date taken / Date Recorded: 05/07/2023

MSF teams have had to scale up nutrition projects year-round rather than only during peak seasons, to respond to the surge in needs over longer periods for malnutrition that has now become chronic. In 2022, MSF treated around 17,000 children aged 6-59 months for acute malnutrition in the health district of Massakory alone. In the same area, in the first six months of 2023, MSF's teams treated over 8,000 children under five for acute malnutrition, nearly 1,000 more than in the same period in 2022.

While MSF teams have attempted to adapt to this reality by treating malnourished children before their condition deteriorates, they cannot treat underlying causes of high malnutrition rates, such as food and water insecurity. Some of this loss and damage is likely "locked in"ⁱⁱ or unavoidable; what is not, however, requires action that goes beyond the scope of health systems resilience or humanitarian assistance, and is where new loss and damage response mechanisms should ideally be applied.



Much of the local economy in Chad depends on the rearing of livestock such as cows, goats, and camels. Because of a lack of rain and bad harvests, it has become difficult for farmers to feed their animals.

Photographer: Claudia Blume
Date taken / Date Recorded: 31/12/2021

ⁱⁱ "Locked-in" is a situation in which the future development of a system, including infrastructure, technologies, investments, institutions, and behavioural norms, is determined or constrained ('locked in') by historic developments.

IPCC, https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_AnnexI.pdf

Conclusion

Amidst compounding crises and an increasingly warming world, exceptionally ambitious climate adaptation and mitigation action are needed today to prevent any further rise in the adverse effects of climate change on the health and well-being of the world's most vulnerable and most affected communities. Importantly, any climate action must not only be tailored to people's needs but also be co-designed with them.

As loss and damage discussions take centre stage in climate negotiations, the collective experiences of organisations working in the health and humanitarian sector in climate hot spots are important resources.

Protecting people's health from the negative consequences of the climate emergency must be central to all decisions that will affect those who are most vulnerable to its effects. Awareness of the health impacts of climate change must be built into the design of response and funding mechanisms for loss and damage, and coherent and complementary action is needed across those mechanisms and humanitarian, health, and disaster reduction responses.

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Organisations and acknowledgements

This briefing paper is a collaborative effort of the *Lancet* Countdown on Health and Climate Change, a global academic effort that monitors the links between health and climate change through annual data on more than 45 indicators, and Médecins Sans Frontières, an international medical humanitarian organisation providing assistance in crisis situations in more than 70 countries.

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THE LANCET COUNTDOWN

The *Lancet* Countdown: Tracking Progress on Health and Climate Change is a multi-disciplinary collaboration monitoring the links between health and climate change. It brings together lead researchers from 52 academic institutions and UN agencies in every continent, publishing annual updates of its findings to provide decision-makers with high-quality evidence-based recommendations. For its latest assessment, visit www.lancetcountdown.org.

MÉDECINS SANS FRONTIÈRES/DOCTORS WITHOUT BORDERS (MSF)

MSF is an international, independent, medical humanitarian organisation working to alleviate suffering and to provide medical assistance to people affected by conflict, epidemics, disasters, or exclusion from healthcare in over 70 countries today. Climate change, a human-induced reality, is also of great concern to MSF, as it may well alter the dynamics of conflict and the incidence of disease, impacting communities already at risk. On the basis of scientific reports outlining what can be expected in the future, the organisation recognizes how vital it is to prepare to assist the people most affected. At the same time, MSF is assessing its own carbon footprint and taking steps to incorporate environmentally responsible working methods, products and equipment into its projects.