

The Lancet Countdown on Health and Climate Change

# Policy brief on humanitarian impacts

NOVEMBER 2019



# Médecins Sans Frontières: Humanitarian operations, witnessing and decarbonizing in a warming world

Murtada was born prematurely in a specialized maternity unit in Nablus Hospital in Mosul in May 2019, and named during the hottest June on record in human history for the planet. July 2019 was the hottest ever month overall,<sup>1</sup> both in Iraq and globally. This should be recognised by humanitarian and global health organizations as a potent harbinger, and followed repeated forewarnings of a changing climate and the serious

health impacts this brings.<sup>2-4</sup> It is clear that the current rate of warming has been much faster in recent decades than anything observed in the past 2000 years.<sup>5</sup> However, the political and perhaps even humanitarian response does not currently match the intensity of humanitarian needs today including those intensified by global warming and their implications for Murtada's generation and future generations



Over two years since the battle between the Islamic State (IS) group and the Iraqi forces officially ended in Mosul, Iraq, the healthcare system remains fragile. Amongst the most vulnerable are pregnant women. To respond to high unmet needs, in 2017 MSF opened a specialised maternity unit in Nablus Hospital, West Mosul, to provide safe, high quality and free maternal and neonatal care to women and their babies.

*Image: Murtada by MSF/Maya Abu Ata, June 2019.*

Human-induced climate change and environmental degradation is linked to profound and increasing health impacts.<sup>6,7</sup> Médecins Sans Frontières/Doctors Without Borders (MSF) medical humanitarian teams around the world witness and respond to population and individual level health impacts that are in many cases likely exacerbated by climate change. This includes, for example, increased transmission of infectious diseases such as malaria, dengue and cholera; water scarcity and food insecurity, leading to malnutrition; impacts of heat exposure including acute dehydration leading to acute kidney failure or heat stroke, or exacerbation of cardiovascular conditions. Mental health can also be impacted, especially due to extreme weather events and population displacement, including in urban centres.

In addition, climate change can act as a threat multiplier of violence,

forced displacement and psycho-social ill health, increasing the vulnerability of populations.

Current global health and humanitarian needs already far exceed the capacity of the health and emergency medical response in many parts of the world. The potential exponential rise in the human consequences of climate change will further exacerbate health and protection needs, even with much-needed rapid adaptation.<sup>2</sup> Amongst MSF's global workforce of 42,000 people in over 70 countries, across medical, operational research, logistics, water and sanitation, fundraising, communications, administration, environmental health, and other disciplines, MSF members increasingly observe potential exacerbated impacts and express concern regarding the health impacts of climate change now and in the future.

*“Climate and environmental-related concerns have an impact on the places where we operate today. That is likely to increase, not only multiplying threats but also making the people we serve ever more vulnerable. The response requires a transversal and interdisciplinary approach [to be] more medically and operationally relevant. It is about adding an ecological lens when we assess a crisis.”*

*Dr Joanne Liu, International President, MSF International General Assembly, June 2019*

Accelerated mitigation of climate change is therefore an essential first step in reducing current and future health burdens and in the avoidance of unnecessary deaths.<sup>2</sup> Governments and industries, especially those most responsible for climate change and environmental degradation, must respond urgently to mitigate warming and its impacts, and to support the provision of health and humanitarian services to populations in need of assistance.

In parallel, MSF and medical humanitarian actors must advance local, regional and international collaboration and work across sectors and

disciplines to more effectively anticipate, understand and respond to the health impacts, including those exacerbated by climate change, where they work and where they may respond to emergencies in the future. This will require building expert capacity to efficiently assist people, mainstreaming climate and health into existing policy and practices, updating or co-creating new policies, research and programs, while reorienting internal operations to be more climate-smart and low-carbon. This briefing paper provides examples of how MSF is building links between its own field experiences and climate change, and in respect of its ethical and moral responsibility to ‘do no harm.’



*“Many children of my generation were able to go to school thanks to farming. But now because of deforestation and climate change, there is less and less that Idjwi can produce. So I worry about the next generation,” Innocent Kunyuwana, a Congolese doctor born on Idjwi Island who is in charge of MSF emergency team operating in the South Kivu, treats a child who has just arrived to the Cholera Treatment Center on Idjwi island, Democratic Republic of Congo.*

*Image: Marta Soszynska/MSF August 2018.*

# Health and extreme weather events

As climate change is expected to increase the likelihood and the intensity of extreme weather events (IPCC, 2018), the impacts on vulnerable populations are bound to worsen. Floods can lead to direct injuries and death and the spread of infectious diseases, while drought can result in food insecurity, malnutrition and impede efforts to improve sanitation and hygiene.<sup>9</sup> In its 2019 global report, the Lancet Countdown suggests there have been increased drought events in areas across Africa, while populations in parts of South America and Asia increasingly experience both drought and extreme rainfall.<sup>9</sup>

The increase of extreme weather events and long-term changes in rainfall and temperature patterns globally have serious health impacts ranging from increased food and water insecurity to the accelerated spread of climate-sensitive diseases amplifying human vulnerabilities and displacement.<sup>10,11</sup> Understanding the connections between climate-sensitive diseases and climate variability can contribute to improved planning, based on predicted increases in disease burdens in already-vulnerable populations.<sup>12</sup> While not as precise as weather models, these seasonal to annual forecasts are an essential tool for planning humanitarian responses.



**Alesi Phiri, 7 years old, walks on a former field as she looks to the thick coat of dried mud. 85% of the population in the area relies on agriculture for economic survival. As all of the crops have been destroyed in this area, the consequences of the floods are likely to be felt for months to come.**

*Image: Luca Sola, Malawi, 2015.*

During Cyclone Idai in March 2019, which had devastating impacts in Mozambique, Zimbabwe and Malawi, MSF rolled out an emergency response in all three countries carrying out initial disaster-response assessments, providing medical care including via mobile clinics, and distributing non-medical items such as buckets and soap, ensuring safe water and sanitation to prevent the spread of waterborne diseases. The Mozambique Ministry of Health, with MSF, the World Health Organization (WHO) and other actors, vaccinated over 900,000 people for cholera.<sup>13,14</sup> Today, MSF is assessing the effectiveness of its Cyclone Idai response through its Stockholm Evaluation Unit.

Cyclone Idai, considered one of the worst weather-related disasters to hit the southern hemisphere, demonstrated the need for predictions of future and more frequent disasters in order to provide timely responses. To better prepare for future crises and facilitate more timely and effective responses, MSF is working on a crisis anticipation mechanism through an incubator project called Meteorological and Climatic Anticipation System (MACAS), to further integrate weather and climate information into the operational decision-making process. MSF is also increasingly collaborating with experts involved in humanitarian preparation in a variety of scientific disciplines.<sup>15</sup>



Distribution of Non-Food Items (NFI) in remote areas. "The cyclone and associated flooding had a devastating impact on people living in the affected area of Mozambique. Some areas still remain difficult to access due to the flood waters. MSF continues to run community-based activities to tackle the last remaining cases of cholera and limit the possibility of a resurgence of the outbreak. The activities include providing clean water, improving sanitation, distribution of soap and other hygiene items, and health promotion. In addition, MSF is rehabilitating health structures, distributing non-food items such as soap and blankets in areas with difficult access, running mobile clinics to provide primary health care (including malaria and malnutrition screening) and providing mental health care."

*Image: Giuseppe La Rosa/MSF 20 April 2019.*

## Changes in climate suitability for infectious disease transmission

The 2019 global Lancet Countdown report tracks the change in climate suitability for a number of infectious diseases, including malaria, dengue, *Vibrio cholerae*, and other pathogenic *Vibrio* species. Vectorial capacity for dengue, the ability of the mosquitoes responsible for the transmission of this virus to cause new infections, has increased for both *Aedes aegypti* and *Aedes albopictus*, with 2017 recording the second highest vectorial capacity for both vectors since 1950, and nine of the ten highest

recordings occurring since 2000.<sup>9</sup> In highland areas of Africa, climate suitability for malaria transmission, which is affected by temperature, precipitation, and humidity, has increased by almost 30% since the 1950s.<sup>9</sup> For coastal *Vibrio cholerae*, regional increases in environmental suitability in Asia, Europe, the Middle East, North America and Northern and Western Africa have led to a global increase in suitability for the bacteria of 9.9% since the 1980s.<sup>9</sup>

# CASE STUDY: CLIMATE-SENSITIVE DISEASE-EXTREME PRECIPITATION

## Cholera in Yemen and Haiti

**DR FRANCISCO LUQUERO, EPICENTRE**

Cholera remains a significant public health problem in the poorest areas of the world, and climate change will likely alter the pattern of disease for endemic cholera and lay the foundations for further cholera epidemics.<sup>16</sup> MSF has been a major actor responding to cholera outbreaks in the last 40 years,<sup>17,18</sup> including in Haiti and Yemen.<sup>19,20</sup> Aware of the influence of climate and environmental conditions on cholera spread, MSF has established collaborations with academic institutions and international partners to describe and better understand the role of these factors on the risk of outbreaks. In Haiti, MSF and École polytechnique fédérale de Lausanne (EPFL) collaborated to develop real-time forecasting of cholera following the passage of hurricane Matthew through the island, which helped to inform decision making during the response.<sup>21</sup>

Research conducted in Yemen in collaboration with MSF-Epicentre, academic groups and other international agencies reveals how the war

in Yemen has contributed to cholera spread due to damage of water supply infrastructure vital during chronic water scarcity and insecurity.<sup>19</sup> In addition, soaring water prices led to surges in the number of Yemenis in need of water and sanitation assistance. Together with heavy rains between April and July 2017 in Yemen, these were leading contributors to the massive outbreak that affected most of the country. This demonstrates the importance of understanding the drivers of infectious diseases dynamics and influence that climate change could have in increasing the risk of outbreaks.

Complementary work carried out with Johns Hopkins University has shown the influence of the ENSO variations on the risk of cholera spread in Africa.<sup>11</sup> Additional work is required to translate this research to implementation, especially by improving MSF's preparedness to prevent and quickly respond to outbreaks.



**In the cholera treatment centre at the Al Thawra hospital, Iraq, MSF health promotion team teaches former patients and caretakers good practices to avoid cholera, such as the best way to wash their hands. Between 2016 and 2017, two waves of cholera outbreaks hit Yemen. Although the disease was subsequently brought under control, health authorities and medical organisations have continued to see cholera cases in almost all governorates of the country since the end of the last outbreak. In March 2019 MSF called for urgent measures to enhance cholera preparedness and response in Yemen to stop the outbreak that has persisted for more than two years.**

*Image: MSF, Yemen, October 2017.*

# Terrestrial food security and undernutrition

The number of undernourished people has been increasing since 2014, reaching 821 million in 2017 and posing a major global health challenge.<sup>22</sup> The 2019 global Lancet Countdown report indicates that global crop yield potential for three of the world's major crops (maize, winter wheat and soybean) is decreasing.<sup>9</sup>

Malnutrition is endemic in the Sahel strip that runs across the middle of Chad. MSF's most recent activity report shares that in 2018, "a number of factors exacerbated malnutrition, particularly severe seasonal food insecurity, a general lack of purchasing power, and a deepening economic crisis. A public health workers' strike further reduced access to care."

MSF launched an emergency nutritional response in the capital, N'Djamena. In July 2018, the organization opened an inpatient feeding centre in partnership with the Ministry of Health. MSF teams treated over 1,000 children aged under five for severe acute malnutrition and associated medical complications and set up an additional six outpatient feeding centres in health centres around the city.

The organization also treated severely malnourished children in Wadi Fira, a rural region in eastern Chad, where the 'lean season' – when food stocks are depleted and the risk of malnutrition mounts – was particularly harsh in 2018.<sup>23</sup>

*"The region of West and Central Africa is threatened by turmoil stemming from violent conflicts, demographic pressure and consequences of climate change, including chronic food crises, forced migration, epidemics and emerging diseases. In this context, preserving the space needed to provide a high quality [humanitarian] response becomes a real challenge. Climate change has a very direct impact across the whole region, and we have had a wave of reports of drought in the Sahel since 2012.*

*At the same time there was the loss of the Lake Chad basin. When I was a child on holiday in the 1980's, the Lake Chad was a thriving place and we could go on the boat across the lake. The last time I visited in 2006 was during another cholera outbreak. All of a sudden this lake the size of Lake Albert shrank to nothing - people lost their jobs, the economy suffered, all in the space of 30 years. That has led to higher insecurity. On the medical side we have seen malnutrition, case after case of malaria, ever-increasing numbers of measles outbreaks and a lot of meningitis.*

*When a child is malnourished you're not sure if it's because they do not have enough food or because every month the child is sick – you don't know.*

*I see a crisis of displacement in the north of Mali; it's really linked to the changes; people don't have any more water, they need to walk further with their cattle to find water and are moving further and further south. Indicators like the cattle herders searching for water and repeated conflict with farmers tell me that climate change is having a huge impact.*

*What do we as medical people do? Are we seeing emerging diseases, or diseases coming back? We have to start to put these re-emerging diseases and maladies on our surveillance list, and to do more work and research targeting the disease aspect of climate change exacerbating health. We would like to collaborate more with local actors, experts.*

**Dr Chibuzo Okonta, President of the Provisional Board, West and Central Africa Association, MSF**

# CASE STUDY: GEOPOLITICAL ASPECTS OF HUMANITARIAN CRISES

## Climate change and migration in Northern Central America

**LINN BIORKLUND BELLIVEAU, DAHDALEH INSTITUTE FOR GLOBAL HEALTH RESEARCH, YORK UNIVERSITY**

In April 2019, MSF and the Dahdaleh Institute for Global Health Research at York University initiated a joint project and exploratory visit to Mexico, including to its southern border with Guatemala, where MSF provides medical, psychosocial and social assistance to people moving along migration routes in a number of (mobile) clinics.\* The joint team met people from Honduras, Guatemala and El Salvador who left their homes due to economic, political and environmental drivers including plant disease, food and water scarcity and scarce employment options.<sup>24</sup> They heard many accounts of widespread violence as a reason for displacement and for seeking international protection. While the research is ongoing, preliminary findings reveal an increasing number of people, including family units and unaccompanied minors, leave Northern Central America (sometimes referred to as the 'Dry Corridor' of Central America) because of multiple, often intertwined, factors.<sup>25</sup>

The combination of environmental deterioration exacerbated by climate change, appropriation of land by extractive industries, and criminal gang violence and extortion, has had profound impacts on people's lives, and has

forced many who rely on their land for survival to flee.<sup>26-28</sup> Farmers and coffee cultivators report consecutively failed crops and epidemics of leaf rust in coffee plants, which spreads in warming climates, as growing contributors to food insecurity<sup>29</sup> and forced displacement. Under current protection frameworks, people displaced within or fleeing from Northern Central America because of 'non-traditional' causes exacerbated by environmental deterioration or climate change have very limited access to protection alternatives in Mexico and beyond, leaving them at particularly high risk of violence including sexual assault, extortion, threats, prejudice, and trafficking.<sup>30,31</sup>

People 'caught in limbo' often have to navigate clandestine spaces and find unconventional paths to ensure their safety and justice.<sup>32</sup> Many find themselves as unauthorized migrants with limited access to healthcare, particularly those residing in the southern states of Mexico, and often trapped between erratic state institutions and normative frameworks, criminal gangs, and alarmed locals. Faced with direct dangers, threats and day-to-day uncertainties, wellbeing and health, particularly mental health, become jeopardized for both migrants and host communities.<sup>33</sup>



MSF teams have seen a general increase in the number of women, children and whole families traveling North.  
*Image: Christina Simons/MSF, Mexico, December 2018.*

\* This case study is one example of a longer-term MSF and academic collaboration to investigate and better understand the intersecting drivers of health and humanitarian needs exacerbated by climate change.

# The Do No Harm principle: Mitigating institutional environmental impact

*MSF has a moral responsibility to think about its environmental impact, about local populations, respecting communities and our relationship with communities; not to leave a legacy of trash. We can be more conscious, be judicious and establish a baseline.*

*Dr Kiran Jobanputra, webinar, MSF Climate & Health Working Group, June 2019*

The health sector has a significant and deleterious environmental footprint.<sup>9,34</sup> To better honour the principle of ‘Do No Harm’, MSF is evaluating and analysing its institutional environmental footprint through field and headquarter initiatives. Ongoing and fortified actions include increasing efforts to reduce air freight and air travel, using alternatives or avoiding when unnecessary, doing a deep examination of supply chain and behaviours and scaling clean and renewable energy use.

Efforts past and present to reduce MSF’s negative impact include solar use from Afghanistan, South Sudan, Jordan and Bangladesh, building an energy efficient hospital in Kenema, Sierra Leone through the MSF Energy Sensitization Project,<sup>35</sup> testing biogas as an energy source in Democratic Republic of Congo,<sup>36</sup> testing and using solar air conditioning in its hospital in Haiti as a model for scaling\* and including sustainable lifecycle design into humanitarian innovations.\*\* MSF endeavours to move from ad hoc case studies and pilot project designs to scalable sustainable solutions and adapted operational choices.

## What you measure you mitigate: Environmental Impact Toolkit

In 2019 MSF completed Phase 1 of an Environmental Impact Toolkit incubator,<sup>37</sup> supported by the Transformational Investment Capacity, MSF’s humanitarian innovation fund. Using existing data, the project ‘diagnosed’ MSF’s largest negative environmental impacts through pilot ‘audits’ of offices and field missions in Switzerland, Kenya, Mexico, Honduras, and Canada. Despite the small sample size and incomplete data, the project identified air transport, primarily cargo, followed by personnel travel as MSF’s biggest sources of carbon emissions. The

findings highlight the challenge for MSF to avoid and reduce its air transport and the transformation required to move towards carbon neutrality, while still providing effective emergency medical assistance. The incubator reviewed tools and sustainability practices used by humanitarian and health organizations such as ICRC and Global Green and Healthy Hospitals, to adapt a tool and methodology to measure, mitigate and monitor MSF’s environmental impact, particularly its carbon footprint and waste.

\*\*Air Conditioning (AC) is a large fossil fuel consumer in MSF field operations, used extensively to establish controlled temperatures in pharmacies, operating theatres and laboratories and to improve working and living conditions. In MSF’s hospital in Haiti, an innovative project identified and tested solar power devices as an alternative cooling solution, funded by MSF’s Transformational Investment Capacity. The findings showed suitability of hybrid AC systems – with PV power only and with generator backup – for field hospital conditions, both with respect to installation and economy (return on investment). Next steps include wider implementation and continuous monitoring through the hot season in 2019, to provide data for an entire yearly cycle” From: “Using the sun to power air conditioning. Per-Erik Eriksson, Alfredo Gonzalez Paredes, Marpe Tanaka, MSF Sweden Innovation Unit, MSF Operational Centre Paris. MSF Scientific Days London, May 2019

\*\*Protection Against Chemical Exposure (PeACE) Kit, a decontamination vest, “When you talk about the lifecycle of a product its important from cradle to grave to think about the environment impact as well. In conflict zones the environment really suffers so thinking about sourcing and ethics of materials helps to negate impacts where we work.” While the vest’s main purpose is for decontaminating exposed people during a chemical weapons attack, innovator Roger Teck who worked with MSF in Iraq, told suppliers ethical procurement of materials mattered to avoid leaving behind harmful garbage after the vest is used. Potter L. Introducing the Protection Against Chemical Exposure (PeACE) Kit [Internet]. The MSF Sweden Innovation Unit; 2018 [cited 2019Oct15]. Available from: <https://innovation.lakareutangranser.se/blog2/2018/9/21/introducing-the-protection-against-chemical-exposure-peace-kit>.

Early pilot results have anecdotally found ‘what you measure you mitigate’, contributing to instances of immediate carbon emission reductions and efficiency gains as well as catalysing planning for additional mitigation. With wide commitment, uptake and decisions based on data, new behaviour

and policy, MSF’s measuring and mitigating can lead to transformational and responsible changes. The incubator also identified the need to holistically review MSF’s largest supply chain impacts and to roadmap how it can progress towards carbon neutrality and be more “climate-smart.”



**Dorvensky, 4 years old, was burned by a pan of hot water. He was admitted and treated at Drouillard Hospital, Haiti where MSF tested and is using Solar Air Conditioning.**  
*Image: Scott Streble, June 2018.*

## Conclusion

*“The health impacts of climate change demand an urgent response. Unmitigated warming undermines health systems and global health objectives”*

*Dr María Guevara, Senior Operational Positioning and Advocacy Advisor, MSF Operational Centre Geneva*

As an independent medico-humanitarian actor in emergencies, MSF’s ability to save lives, alleviate suffering and promote human dignity will require it to better track and anticipate the health and socio-political impacts of climate change.<sup>38</sup> MSF is taking steps to make its operations more climate-conscious, such as updating its health needs assessments, integrating climate risk assessments and reviewing its monitoring and evaluation to incorporate relevant indicators. The organization will continue to demonstrate that the humanitarian response can be made more sustainable, especially with innovative work guided by the medical responsibility to ‘Do No Harm’. These first steps are critical, if not symbolic commitments, to turn words into meaningful action to ensure MSF is an effective, ethical and socially responsible organization.

Taking this commitment further would also include *témoignage* (witnessing) and humanizing the real negative health effects of climate change observed by field workers and developing strategic positions on medical and humanitarian consequences exacerbated by human-induced climate change and alteration of ecosystems.

The global health, humanitarian and development sectors, including MSF, together with local communities and other stakeholders who work to safeguard the health and wellbeing of populations, can adapt to improve their response, ensure collaboration, share knowledge and join their voices for an urgent response to reduce suffering and avoid the risk of vulnerable people being made more vulnerable by climate change. They can better mitigate their own contribution to health harm.

In order to mitigate risks, especially to the most exposed and vulnerable individuals and communities, it is critical for humanitarians and health actors, including MSF, to state the limitations of and challenges to their current ability to reach patients in need now and forecast to come and to highlight the disproportionate impacts on specific groups. They also can recognize the inadequate political response thus far, urging governments, industries, decision-makers and fossil fuel consumers to commit to attain or surpass science-based targets and urgently implement solutions.

# Key messages

- Apply a cross-sector and interdisciplinary approach to humanitarian and global health responses and local, regional and international collaborations
- Identify, highlight and respond to the disproportionate needs of vulnerable groups
- Better understand the connections between climate-sensitive diseases and climate variability to improve humanitarian planning and responses based on predicted increases in disease burdens in already-vulnerable populations
- Urgently enhance cholera preparedness and response in countries without surveillance capacity
- Develop monitoring and evaluation frameworks and better document risks and interventions with a climate change lens, update health needs assessments, analyze patterns and changes over time and contribute data to operational research
- Document environmental health-related and climate change effects on vulnerable populations to contribute to broader policy advocacy and legal initiatives
- Identify and reduce health disparities in urban slums, including through ensuring access to services and provision of mental health support
- Provide protection for people fleeing including through urging respect and development of people-centred policies
- Recognise that human needs outstrip the humanitarian response: as such, health considerations should be integrated into national and international mitigation planning to reduce suffering
- Invest funds in strengthened humanitarian responses
- Commit to efforts to rapidly and exponentially reduce the negative environmental impact of global health and humanitarian organizations, including MSF, in line with medical ethics.

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## Organisations and acknowledgements

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### THE LANCET COUNTDOWN

The Lancet Countdown: Tracking Progress on Health and Climate Change is an international, multi-disciplinary collaboration that exists to monitor the links between public health and climate change. It brings together 35 academic institutions and UN agencies from every continent, drawing on the expertise of climate scientists, engineers, economists, political scientists, public health professionals, and doctors. Each year, the Lancet Countdown publishes an annual assessment of the state of climate change and human health, seeking to provide decision-makers with access to high-quality evidence-based policy guidance. For the full 2019 assessment, visit [www.lancetcountdown.org/2019-report](http://www.lancetcountdown.org/2019-report).

### MÉDECINS SANS FRONTIÈRES/DOCTORS WITHOUT BORDERS (MSF)

MSF is an international, independent, medical humanitarian organization 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.

MSF is increasingly integrating analysis and work on issues at the intersection of climate change and health into its strategic planning, including incorporating planetary health and environmental health disciplines, building on transdisciplinary approaches and multisectoral collaboration, plans to bridge field-based data with analysis on impact and vulnerability mapping, and reanalysing past emergency responses through a climate lens to draw lessons for future interventions. MSF is also exploring new and expanded strategic alliances as well as predictive and preparatory tools to aid it to respond more quickly and effectively to emergencies, including disasters related to extreme weather events. The organization's focus on saving lives, reducing suffering and promoting dignity remains unchanged. However, to ensure it remains operationally relevant, able and efficient in a warming world, it is starting to apply a climate change lens, planning for new and adapted or reinforced medical humanitarian action.

To date, MSF's actions, resources and discussions in response to the health impacts of climate change have been ad hoc, yet in 2019 have culminated in a commitment to "urgently address the increasing humanitarian consequences on vulnerable populations of environmental degradation" and acknowledgement of the intractable link between the populations we assist and their environment, which has implications for how the organization interprets its social mission going forward.\*

\* "A matter of urgency: MSF role, responsibility and capacity regarding the climate, environment and their health consequences makes climate change "an integral pillar of an MSF global institutional strategy and medical-operational policies"."