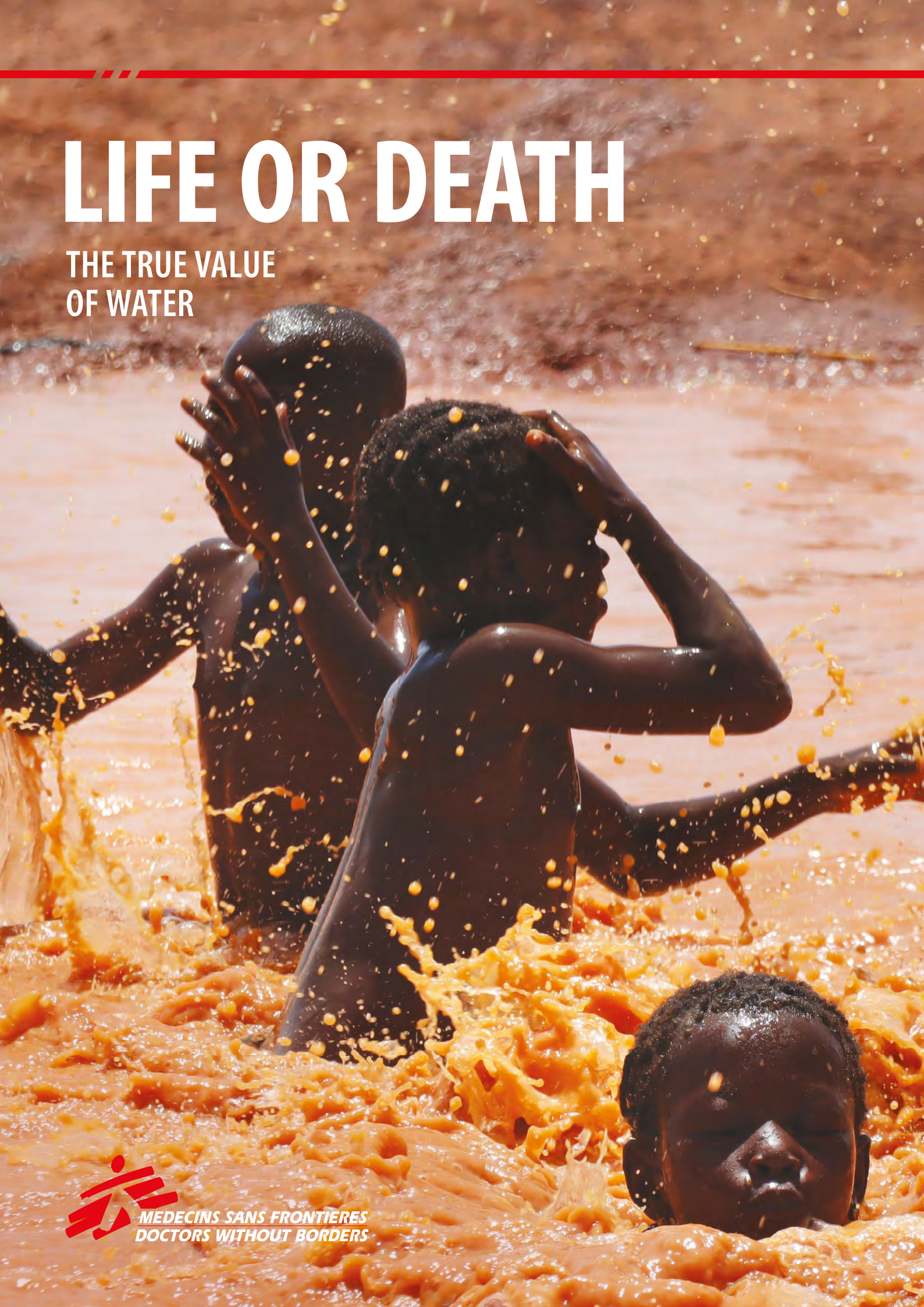
LIFE OR DEATH

THE TRUE VALUE OF WATER



MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

"When we arrive somewhere and ask people what they need, 100 per cent of the time they answer 'water'. It is not easy to picture, but people can walk as much as five, 10 or even 20 hours to get one jerrycan of water." – Anaïs Prudent, emergency coordinator, Madagascar

KEY STATISTICS

829,000
People die each year from diarrhoea due to unsafe drinking water, poor sanitation and hand hygiene. Diarrhoea is the second leading cause of death among children aged under 5 years.

CHOLERA can kill within hours if left untreated. Cholera is still endemic in 69 countries, resulting in an estimated 2.9 million cases and 95,000 deaths per year worldwide.

2 BILLION PEOPLE
Still do not have basic sanitation facilities such as private toilets or improved latrines.

NEARLY 3/4 OF THE POPULATION
in least-developed countries lacked handwashing facilities with soap and water.

* Worldwide statistics taken from World Health Organization. Water, sanitation, hygiene and health primer, 2019

A MATTER OF LIFE OR DEATH

Imagine escaping with your family from a conflict zone, only to have them fall sick from taking a drink of water.

In the countries where you support Médecins Sans Frontières, water can be a matter of life or death. Too little, people suffer and crops fail. Too much, we see floods, cyclones, landslides and epidemics.

Contaminated water causes illness, clean water prevents it. Water is therapeutic for our patients and even a mode of transportation for our teams.

As you will read in this report, in contexts beset by crisis and disaster, the most vulnerable are often the first to suffer – children, pregnant mothers, displaced people, the elderly.

People are cut off from water supplies in Afghanistan and Syria; lack of food and water deepens existing inequalities in the Sahel; unrelenting storms and cyclones batter eastern Africa.

In many of these places, humanitarian medical needs continue to grow and climate crises are a new frontier for humanitarian concern. Parching drought is leading to increased malnutrition in Madagascar, more frequent destructive weather events are destroying livelihoods in countries like Malawi, and persistent flooding in South Sudan has caused a rise in vector-borne diseases like malaria.

These crises are often interconnected, and one of the common links is water.

Through it all, your support ensures Médecins Sans Frontières can look to the future, helping communities prepare for the uncertainties ahead, while always being ready to respond to the next emergency.

Most importantly, your compassion transforms the lives of so many people every day, who would otherwise be cut off from the life-giving properties of water.

Jennifer Tierney
Executive director
Médecins Sans Frontières Australia

Médecins Sans Frontières operates clinics, health centres and supports the hospital in Kongoussi, Burkina Faso, where thousands of people have sought refuge from violence in the northern Sahel region. We also built and rehabilitated several boreholes to increase access to clean drinking water © MSF/Mario Fawaz, 2021.

AFGHANISTAN – NEEDS ARE EVERYWHERE

This little boy, like all patients, has to wash his hands before entering our Kahdestan clinic in Herat, Afghanistan. © Sandra Calligaro, 2021

A direct consequence of water scarcity is food insecurity, which has the direct medical consequence of malnutrition. Afghanistan is facing a drought which was officially declared last June, the second to impact the country in four years.

For the people of Afghanistan, this is dire. The drought has also exacerbated the harsh living conditions amid conflict, COVID-19, economic crisis, and a collapsing health system. Christophe Garnier, project coordinator, commented:

"The drought has had a terrible impact. Rain has been scarce for years and people are fleeing drought. The general economic situation which has been bad for a long time adds to that. It is a cumulative effect."

Médecins Sans Frontières has seen high numbers of malnourished children in our inpatient therapeutic feeding centre (ITFC) in Herat Regional Hospital. The ITFC was initially set up with 40 beds, but we are adding capacity to cope with the escalating numbers of sick children. Mamman Mustapha, former project coordinator, reports:

"(Other) health facilities are either closing or have reduced to providing minimum services. People are jobless and are poor; they cannot afford private care. In a nutshell, needs are everywhere.

Our ITFC has been extremely busy, with over 60 new admissions each week and the number of hospitalised patients reaching more than double our maximum capacity. This prompted the decision to increase the number of beds.

Many of our patients and their families travel more than 15 kilometres to seek medical care, while some come from as far away as Badghis, Ghor and Farah provinces, well over 100 kilometres away."

A one-month-old premature newborn with her carer in our Inpatient Therapeutic Feeding Centre at Herat Regional Hospital, Afghanistan. © Sandra Calligaro, 2021

"MY GRANDDAUGHTER IS MALNOURISHED"

Marwa, displaced from Ghor province, travelled to our ITFC in Herat with her granddaughter.

"I am from Du Layna district. There was fighting so we escaped and became refugees. My granddaughter is malnourished. Because of hunger and poverty, she is so weak. We do not have wheat and other things to eat. We came here, but here we do not have anything either, and there is no work to do."

"IT'S THE LUCKY ONES WHO REACH US"

Dr Mohammed* is at our hospital in Lashkar Gah, Helmand province.

"Four hundred. This is the number of severely malnourished children we are treating every month at Boost Hospital.

Every one of these young patients is under five years old. Many of them are also suffering from worrying complications such as pneumonia, diarrhoea or gastrointestinal problems.

The healthcare system has collapsed in Helmand, and people are now travelling from very far districts in the north of the province to reach us. These are journeys that can take well over three hours. That is very far when a child is very sick.

The people who do reach us are the lucky ones.

There was one family who came from Musa Qala, from where only a few patients have ever reached us. Their story helps explain the crisis.

The family were very poor and struggled to find food while the young mother was pregnant. This is the same for many families now – there are no jobs and everything in the market is very expensive. People also have very limited access to information on health or parenting, so when their child is severely sick, they sometimes do not know what to do or where to go.

When the baby was born, the young mother became very weak and could not breastfeed her child. The little girl was malnourished from the very first day of her life.

Although we treat many patients for around three weeks, this little girl has now been with us in the feeding centre for three months. She is still weak, but we hope she will improve with our care.

Right now, in Afghanistan, many people are scared every day. But we deserve a good life, and we want to live in peace. In this situation, my work with Médecins Sans Frontières gives me hope."

*Name changed to protect his identity

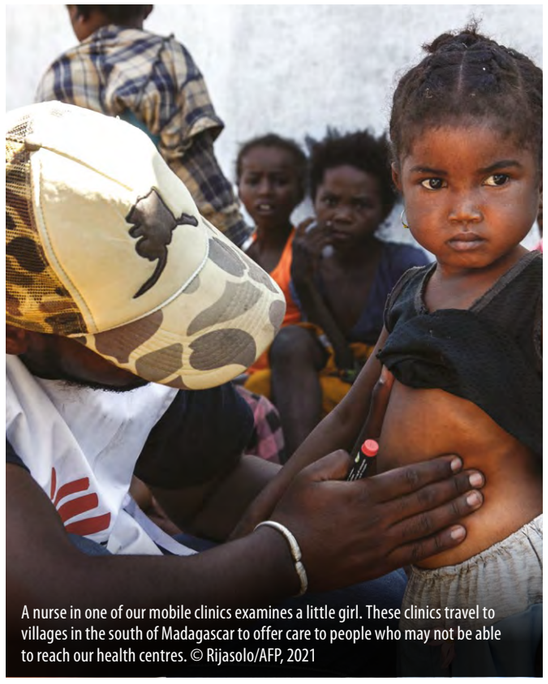
DROUGHT CRISIS IN MADAGASCAR

People in southern Madagascar are also experiencing an acute food and nutrition crisis that is leaving thousands of children severely ill, and pushing families into extreme poverty. After years of back-to-back droughts, the prospects for the harvest are extremely poor. In the last rainy season, the region saw 70 per cent or less of normal rainfall, with localised areas receiving less than 45 per cent.

As well as drought, sandstorms and the economic impact of COVID-19 are only making things worse. There is a surge in malaria, lack of access to healthcare and drinking water.

Since last year, Médecins Sans Frontières emergency teams have been running mobile clinics during the lean season to deliver humanitarian and medical assistance in the worst affected districts, including Amboasary and Ambovombe.

When children are malnourished, they are vulnerable to a whole range of other diseases too. In Madagascar, around 40 per cent of our youngest patients are suffering malaria or respiratory infections. A third of the malnourished children we treat in our mobile clinics in Amboasary suffer from either diarrhoea or parasitosis, which points to a lack of clean water.



A nurse in one of our mobile clinics examines a little girl. These clinics travel to villages in the south of Madagascar to offer care to people who may not be able to reach our health centres. © Rijasolo/AFP, 2021

Four consecutive years of drought in southern Madagascar have caused a worsening nutrition crisis, known on the island as kéré. Windstorms have covered once-arable soil with sand, and buried sources of food like cactus-fruit, eaten during the lean season. © Ainga Razafy/MSF, 2021

TAKING TREATMENT TO THE PEOPLE

Cut off from affordable healthcare, families living at the heart of Madagascar's food crisis face difficult decisions. An exploration team scouted one village called Tomboarivo in 2021, and we dispatched a mobile clinic team. Nurse Benjamin Le Dudal was on that team, and shared his experience taking treatment to people in need:

"Villages just a few kilometres apart can vary from satisfactory to catastrophic, and neither government figures nor rumours can reliably predict the situation. The best solution is to go and see for ourselves.

It took us eight hours to cover the 200 kilometres of bumpy track that led to this fokontany (village). On the road, our convoy passed only a few children, perhaps ten years old, leading small herds of goats and zebus through the vast mountainous and semi-desert expanses that extend beyond Ebelo. The shepherds watch us go by, frozen in place and often too astonished by our sudden appearance to greet us.

Further on, the landscape takes on a more austere allure, alternating between the desert road and the low vegetation of the scrubland. Our 4x4s cross so many dry rivers that I gave up counting them. The horizon is barred by mountains with slender curves that rise above the plain like motionless waves.

We finally reach Tomboarivo in the middle of the afternoon. The mayor tells us that the population of the fokontany has been halved since this episode of malnutrition began. Three years without rains triggered an exodus, sending several thousand people out on the roads to seek greener pastures, towards the coast or far up to the north. The mayor thanked us for our presence and gave us permission to pitch the two large tents, one of which will serve as a dormitory, the other as a consultation room.

I organise a small training session for the Malagasy doctor and the two nutritional assistants who have joined us this week.

In the screening area, we see children whose number and general state of health is not as worrying as our initial estimates led us to fear. However, several of them require treatment, some urgently. A 16-month-old boy is dehydrated and severely malnourished. We will transfer him to hospital in one of our vehicles for specialist care.

The cost of round-trip transport, not to mention accommodation and food on site, quickly becomes prohibitive for these poorer families. It is a safe bet that the mother of this boy would not have been able to afford the transfer to hospital.

How many children die like this for lack of affordable community care? That very morning I observed a funeral procession leave the village, accompanied by lamentations and tears. A seven-month-old child had died the day before.

Our day ends after eight hours of consultations. The next morning, I take advantage of having some time, and call the doctor who took care of the child we transferred earlier. He is out of danger."

VOICES FROM THE FIELD

"THEIR THIRST IS EVEN WORSE THAN THEIR HUNGER"

Emergency coordinator Anaïs Prudent reports from Madagascar:

"We saw a boy arrive with his grandmother. He could barely stand up. He was 13, and he weighed 23 kilos.

The hunger season is the period between harvests. People run out of food stocks from the previous harvest and must wait for the next one. It is a challenging time for nutrition as children's health steadily worsens until the following March. It is absolutely vital during this period to ensure that as many vulnerable people as possible have access to food distributions.

The number of vulnerable people who are affected in Madagascar is extremely high. Children stay sick for a really long time. They do not gain enough weight. If all they are getting is therapeutic food, it is not sufficient.

When we arrive somewhere and start talking to people and asking them what they need, 100 per cent of the time they answer water. People can walk as much as five, 10 or even 20 hours to get one jerrycan of water.

We sometimes see children who, even though they are suffering with moderate or even severe malnutrition, cannot eat food we give them because they are so thirsty.

I cannot get out of my mind a baby we examined in the mobile clinic in Amboasary district. She was eight months old and weighed 4.6 kilos. We tried to do the appetite test using therapeutic food. The baby would not eat and we were really worried. Then at last the nurse came up with the idea of getting her to drink water. She drank a cup-full and then ate some food.

I find it profoundly shocking that children who are really starving are so desperately thirsty that their thirst is even worse than their hunger.

Our teams also assist with water, hygiene and sanitation. In addition to trucked water distributions, 64 hand pumps have been created or repaired in remote communities.

A huge problem with long-term malnutrition, which is exacerbated by acute episodes, is its many effects on children's development, from physical and psychomotor through to numerous bodily functions. The body is automatically forced into economy mode, and this economy leads to stunting, but also affects its growth in general. We must not think that these kids are simply too small or too thin."

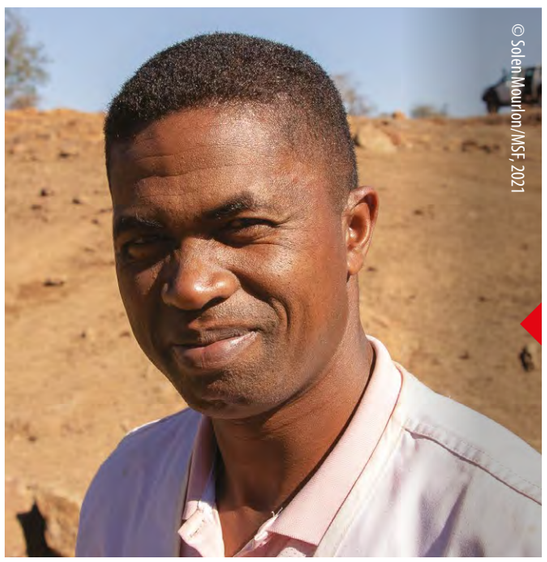
As part of our emergency response between March and December 2021, our teams treated more than 11,000 children in Madagascar.


© Solen Mourlon/MSF 2021

“My name is Tsidemoke, I am 55 years old. I have seven children. With me is the youngest, he is six years old.

I am a farmer, I work in my field, but only if the rain falls, and right now I look like I am out of work because of the drought. I do not know how we are going to get out of this if it continues.”

– Tsidemoke


© Solen Mourlon/MSF, 2021

SOANIAVY

“My name is Soaniavy, I am 28 years old and I am not married. I only have one daughter, her name is Nombantsoa, she is 19 months old. This is the third time that we have come to the mobile clinic. When I first came, my daughter was really sick. She was very thin because we only ate tubers that we found in the forest.”

AINA, WATER AND SANITATION MANAGER

“We have launched a water trucking program to bring drinking water to villages in difficulty. This is an emergency solution while waiting for a lasting solution. Many people here have parasitic diseases and diarrhoea. The aim is to reduce the diseases associated with the consumption of contaminated water and for the people to be healthy."


© Solen Mourlon/MSF, 2021


© Solen Mourlon/MSF, 2021

VOAJOBOA

“My name is Voajoboa, I am 40 years old. I have nine children and the youngest is one and a half years old.

My son had malaria, so he was treated by the doctor at the last mobile clinic. We only eat tubers that we find in the forest and brèdes [greens] that we grow. We have no more goods left. We have nothing left. No more zebus, no more cattle. We sold everything to buy medicine when we were sick. We are really in trouble.”

“If we still had questions about the need for a humanitarian intervention in Madagascar, our clinic answers them without ambiguity. From the first day, we see processions of slender mothers with acutely malnourished children. We use the term “marasmus” to describe this combination of fat loss and total muscle loss, often accompanied by bellies swollen by digestive parasites. These kids’ lives are in the balance: without food in sufficient quantity and quality, they will surely die.”

– Nurse Benjamin Le Dudal

WATER IS LIFE

Families walk through floodwaters near Bentiu, South Sudan. Over 835,000 people were directly affected by flooding over the 2021-2022 rainy season, the worst flooding the country has seen in decades. © Sean Sutton, 2022

Q & A WITH DR LACHLAN MCIVER, TROPICAL DISEASES AND PLANETARY HEALTH ADVISOR

An Australian doctor specialising in rural medicine, tropical medicine and public health, Lachlan has completed multiple Médecins Sans Frontières field assignments, including in South Sudan, Lebanon, and most recently Mozambique. He has worked for the World Health Organization examining the health impacts of climate change in Pacific Island countries, and as a consultant in emergency humanitarian action and environmental health.

© Lachlan McIver, 2017

How does water affect the lives of people in the settings where Médecins Sans Frontières works?

Water is life. Without water, there is no life, not just for humans, but for any other organisms on this planet. Water is also one of the most fundamental ways in which human health can be imperiled.

We have problems of water safety, where it is available but it is spoiled; problems of water security, where it is not available; then there are hydrometeorological disasters – droughts, floods and tropical storms, all water-related and all disastrous in their own way.

How does this affect the kinds of care you are providing to people in need?

There are five categories of medical problems that commonly emerge from impacts on planetary health, using Médecins Sans Frontières' definition: health problems arising from the interaction between humans, animals and the environment. A lot of our work comes from tackling these problems.

- Vector-borne diseases, those spread by insects such as mosquitoes, including malaria, but also viruses like dengue fever.
- Waterborne diseases, typical diarrhoeal infections from bacterial viruses, but also specific epidemic prone waterborne diseases such as cholera.
- Malnutrition, specifically food insecurity leading to malnutrition.
- Natural disasters: hydrometeorological disasters and those linked to weather and climate, such as the droughts, floods and tropical storms, as well as earthquakes, tsunamis and volcanoes.
- Neglected and emerging infectious diseases: this includes the official World Health Organization neglected tropical diseases, most of which are vector-borne or waterborne, like schistosomiasis, caused by a tiny parasite transmitted by water-dwelling snails. And emerging infectious diseases – obviously, we are all currently two years into a pandemic almost certainly caused by a virus that made the jump from a nonhuman vertebrate species to humans.

What are the major impacts you're seeing where Médecins Sans Frontières works? Can you give some specific examples?

Because of the changes already under way – increasing temperature, altered rainfall patterns – the geographic range of vectors and the spreaders of diseases like malaria and dengue, is changing. The habitat for the Anopheles mosquito, for example, is moving inland and upland, so there are more populations exposed to malaria. And what that means is, if we do not do something about it, there is going to be an additional 15 million cases of malaria per year.

When you consider that more than 90 percent of the global burden malaria occurs in sub-Saharan Africa, and most of the deaths are in children under five, that means 30,000 additional deaths per year – 50 children dying every day – due to climate change effects on malaria. That is difficult to comprehend or accept, or it certainly should be.

We have some modelling done by colleagues a few years ago indicating that for every one degree Celsius increase in ambient temperature, there will be a five percent increase in diarrhoeal diseases. These already cause 1.5 million deaths per year; again, a disproportionate third of that is children under five. That means a five per cent increase on 1.5 million deaths per year. It is a very significant number of additional deaths.

We are living in the era of increasing frequency and severity of extreme weather events, or at least hydrometeorological disasters. The return period – the interval between disasters – is getting shorter over time, and in many parts of the world their severity has increased. Together it is a catastrophe. Already 60-70,000 people are dying every year. The number of people exposed to and killed by natural disasters has dramatically increased, particularly in the last 20 years.

That is not even getting into interacting phenomena: for example, in the Congo Basin, the Amazon, tropical forests like Indonesian Borneo, the combination of deforestation and artisanal mining is not only exposing populations to malaria, it is also exposing people to contaminants, like heavy-metal toxins from the mines. It is exposing these populations to animal-borne viruses, and then it is also bringing these other problems of conflict and sexual violence.

What does hope for the future look like?

I am involved in some longer-term initiatives that will help us get on the front foot, like our Malaria Anticipation Project in South Sudan.

South Sudan is hyperendemic with malaria. But malaria is very sensitive to changes in the environment, to weather conditions. We are now trying to flip that around. In two sites, we are analysing between seven and ten years of malaria data and meteorological environmental data, throwing in different variables – not just the standard ones on temperature, rainfall and humidity, but wind direction, solar radiation, soil saturation, vegetation density, all these factors that are linked to the availability of mosquito habitats, and the density of mosquito populations, and the exposure of humans to biting female Anopheles mosquitoes.

Those factors happen weeks or months in advance of the actual bite and the malaria infection, so we are trying to ask: To what extent can we use those variables to predict the timing of malaria epidemics? When will they start? How long will they last? How bad is it going to get? With that information, teams on the ground can take a more precise approach to their preventative activities, whether it is mosquito control, distribution of bed nets, getting out to the community and testing and treating. Or ensuring they have sufficient supply of rapid diagnostic tests and antimalarials, and people on the ground.

If our models predict that there is going to be a 30 per cent increase on last season's malaria peak, that means that we need 30 per cent more resources in place to deal with it. That is pretty exciting. It's early days, but if it works we will look at extending it to other places. More infections and deaths can be avoided.

How do Médecins Sans Frontières' values help us tackle these big issues?

Within my first few days of joining Médecins Sans Frontières. I was struck by hearing something that I had not often heard in years of working in other organisations, and that was just one word: patients.

Médecins Sans Frontières is at heart a patient-oriented organisation. We are working to understand what the community wants and needs, and encourage them to co-design our projects and interventions. Then we improve them as we go. It is a more considered, deliberative process. And I think that is right.

WATER AND DISEASE ALWAYS STRIVING TO SAVE MORE LIVES

We have been running water treatment activities in 15 villages in the commune of Bandé, in the south of Niger, to prevent the development of larvae into mosquitoes. © Mario Fawaz/MSF, 2021

In climate hotspots around the world, warmer temperatures and unseasonal rains create a breeding ground for mosquitoes, causing sharp increases in malaria and dengue fever.

Malaria already kills more than 400,000 people a year – mostly children under five in sub-Saharan Africa. Our teams work continuously across the region and have spotted several significant spikes in malaria compared to annual averages.

Meanwhile, rates of severe dengue fever – a leading cause of death in Latin America and Asian countries – have increased a staggering 3,000 percent in the last 50 years due to warmer weather and the spread of dengue-carrying mosquitoes.

BREAKING THE CYCLE OF MALARIA IN NIGER

With every rainy season that starts in June and ends in October, malaria spikes in Magaria, southern Niger, especially among children under five. Hospital admissions also increase.

A catastrophic malaria peak in 2018 saw around 850 children a week admitted to Magaria paediatric unit – the highest for six years. The death rate that year was also the highest, with many children arriving late to hospital.

Nurse Awa Abou Amadou recalls that time as the most challenging of her career. With the other nurses and medical personnel, she worked long hours – sometimes from dusk till dawn without a break. As she explains:

"How could you expect me to leave the hospital at the end of my shift if I could save another baby's life? When we would leave at night to go back to our families, our minds and thoughts were still with the kids at the hospital."

Their other big concern were the most remote communities, where people could not afford to come to the hospital.

That devastating peak brought about a turning point in the history of our project there, aimed at breaking the cycle of child malaria and malnutrition in a sustainable way.

The most significant change has been the shift to decentralised care, via increased community outreach that identifies children at risk. The strategy works by sending mildly sick children home with medication and referring the most severely sick children to health centres. Our teams there can stabilise children or keep them under observation for a few days, transferring them to the paediatric unit in Magaria if necessary.

We also focus on prevention. For villages with large quantities of water close to people's homes, our teams attack malaria by spraying the inside of houses and mosques with insecticides, to cut the chain of transmission.

Finally, there are now 181 community outreach workers working around the clock in 165 villages. Called Mamans Lumière – mothers of light – they educate people and detect malaria cases as early as possible, before they need hospital care. Maman Lumière Mariatou highlighted the project's success:

"Previously, I used to see around 10 children affected by malaria a day. Now, the numbers have drastically dropped."

COMBATING MALARIA THROUGH WATER TREATMENT

"We live because of this water. All our families drink from these water pumps and use the well's water in their households and for cooking. Even our livestock live because of this water," says Houdou Oumaro, village chief of Haramia, in southern Niger.

This region is rich in water resources, with the highest rainfall in the country. However, these large quantities of water are also a breeding ground and habitat for different types of mosquito, including Anopheles, responsible for the year-round transmission of malaria.

To reduce the spread of this potentially fatal disease, our teams are now working with the support of the villagers to treat the water points – including wells, water pumps and ponds – with insecticide. This cuts the lifespan of the mosquitoes by preventing the development of new larvae.

A low dose of insecticide is used in accordance with World Health Organization recommendations. Because it does not work instantly, our teams visit the villages every three to four weeks, as entomologist Dr Randriamaherijaona explains:

"By respecting the recommended dose, the impact remains negligible on the ecological level. This is one of our working conditions, but also one of the concerns of the communities."

The project is already showing success, confirms chief Oumaro:

"Unlike in the past, I sit outside more and without worry. The mosquitoes do not annoy us anymore. In fact, we have noticed a decrease in the malaria cases among the children in the villages – mine included."

Following this, we also launched indoor insecticide spraying in nine other villages located in Maidamoussa commune, in Magaria. Dr Randriamaherijaona adds:

"If the results turn out to be positive, the water treatment activity may be an effective and sustainable solution for the prevention of malaria in places with high incidents of the disease, such as Magaria."

"I was worried my daughter would die"


Zaharia holds her youngest daughter, Balkisou, in the ward of our paediatric unit in Magaria, Niger. © Mario Fawaz/MSF, 2021

Mother of five Zaharia recalls how, during the 2018 malaria peak, her daughter Firdawsi had to stay in our paediatric unit for 32 days with severe malnutrition and high fever.

"I was worried Firdawsi would die. I saw many mothers losing their children at that time. The idea of losing Firdawsi terrorised me so much that I cried for several days non-stop, but I was always hopeful."

Since 2018, Zaharia has brought several of her other children to our unit for treatment.

"When I look back and remember Firdawsi's situation in 2018 and then see her today running and playing like other kids, I regain my strength. I know that my other kids will get better, just like their sister did," she says.


Our teams treated these ponds near the village of Ara, Niger. © Mario Fawaz/MSF, 2021

A Médecins Sans Frontières staff member helps a little girl to pump water in Benue state, Nigeria. We have been responding in this region since 2018, providing primary healthcare and sexual and reproductive healthcare for displaced communities, as well asdistributing mosquito nets and meeting water and sanitation needs. © Biserka Pop-Stefanija, 2018.

HARNESSING THE POWER OF WATER

Our water and sanitation specialists (watsans) use their innovation and knowledge to bring clean water and waste facilities to people in crisis to help them survive. Their work is a cornerstone of our field operations. Working in the heart of communities, from towns hit by cyclones to refugee camps, they provide a lifeline and help restore people's dignity.

For Dr Biserka Pop-Stefanija, becoming a watsan advisor was her way of helping people achieve better health, while preventing the spread of disease. With 20 years experience, including the last 10 years working with Médecins Sans Frontières, she supports, trains and drives innovation in our field projects. Here she describes what is at the heart of her passion:

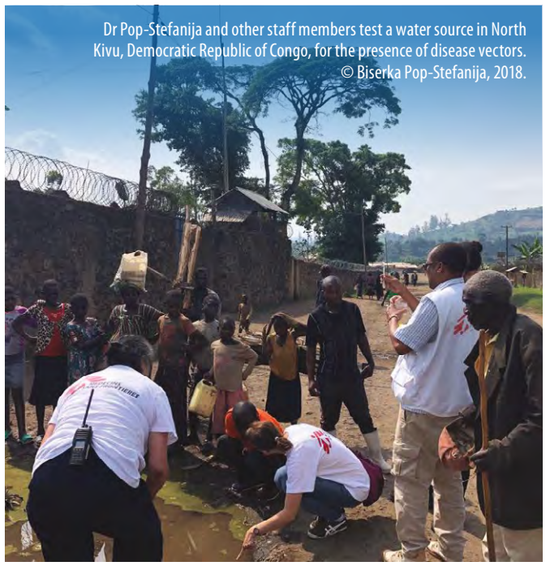
"As watsans we are dealing not only with water. We are talking about sanitation, environmental health, wastewater treatment, and better control to stop the spread of diseases.

In the watsan unit we provide direct support to the field, we also build the capacity of our national and international watsan staff, and prepare them to better respond to the needs.

We also do a lot of research when it comes to water supply, sanitation, expired medical drugs, waste management and topics like menstrual hygiene management. We share guidelines with our field missions to help them with the basics."

Every response is unique, she explains:

"The challenges that we have in South Sudan are not the same as those we face in Bangladesh, Afghanistan or Sudan. Watsans are not just service providers who go and put in pipes and latrines, toilets and showers. As a unit we are part of the public health department, looking at the bigger picture. We want watsan to be an efficient part of disease prevention, to try to reduce the number of people coming to our health structures as a preventative measure. We see our role as a major part of outbreak response prevention."



Dr Pop-Stefanija and other staff members test a water source in North Kivu, Democratic Republic of Congo, for the presence of disease vectors. © Biserka Pop-Stefanija, 2018.

As well as emergency response, her team is always looking for ways to create a sustainable future:

"Médecins Sans Frontières go where we are needed. Even if no-one else goes there, we do, and we go full scale, not just with watsan, but with medical care. We will not solve the world's problems, for sure. But if I can put a drop in this ocean of need, I will be very happy."

– Dr Biserka Pop-Stefanija, water and sanitation advisor, Médecins Sans Frontières.

"For example, as we were wrapping up our project in Katanga, Democratic Republic of Congo, we made sure that we left a longer-term impact by building a solar-powered system to run the water supply for the hospital. It requires a little bit of maintenance and cleaning, but when I went to visit the hospital a couple of years later, the system was still running.

We also had some remaining materials in our stock, and to work out what to do with it, we held a focus group discussion with the local population – because water supply was not actually a challenge for them. However, one thing they did identify was the lack of latrines, so we donated our latrine slabs. It was agreed that every family would dig their own pit, and we would provide the slab and the technical design of the toilet. We also helped them with digging tools, if they needed them. As a result of this, we used all of our latrine slabs and the population there now has access to toilets. We did it together with the community.

This is the way that we would like to go in future."

Throughout her career as a watsan advisor, Dr Biserka Pop-Stefanija has worked many times in South Sudan. However, she has never seen flooding like the country has recently been experiencing. As part of her role she is now looking at strategy development for our future responses:

"We are working together with our London team which is looking at planetary health, mapping and trying to predict potential flooding and potential outbreaks based on the data that we have collected so far.

For example, in Lankien, South Sudan, we have installed a meteorological station to collect the water and rainfall data. Analysis is being done to predict when the peak of malaria will happen, and how big the outbreak will be. We are also trying to make the same predictions for flooding that might happen. In South Sudan we were already preparing for the April-May flood response in February. We pre-positioned items – shelter materials like scaffolding, and cooking sets, mosquito nets and water treatment, gadgets, tablets – everything that is needed for an emergency response.

Bear in mind there is also a conflict going on in South Sudan. So as we prepare for emergencies, we have to deal with the impact of the conflict and a displaced population. It is quite a heavy job in South Sudan."

Dr Pop-Stefanija poses for a picture with staff members in an Ebola treatment centre in Sierra Leone. She has just finished providing training on the process for dressing in full body personal protective equipment. © Biserka Pop-Stefanija, 2014

ON HIGH ALERT FOR EXTREME WEATHER

MOZAMBIQUE: A DANGEROUS COMBINATION

In March 2019, Cyclone Idai tore through Mozambique and parts of Malawi and Zimbabwe, causing devastating loss of life and livelihoods. Soon after, cases of cholera began to appear.

Médecins Sans Frontières launched a massive emergency response. We rapidly established treatment centres, logistics teams worked around the clock to resupply clean water and we supported a campaign to vaccinate more than 800,000 people against cholera.

Just a few weeks after Cyclone Idai made landfall, Cyclone Kenneth also hit Mozambique. It was the first time in recorded history that two cyclones had hit the country in a single season.

As 2022 began, Tropical Storm Ana – the first storm of the season – made landfall in Mozambique. A month later, in early March, Gombe became the second cyclone to hit Mozambique in the 2022 season.

The cyclone season has merged with the impact of years of conflict, creating a humanitarian emergency. Raphael Veicht, head of our emergency unit in Mozambique, said:

"This is a very dangerous combination. Our teams are responding to the new waves of forced displacement by providing people with basic healthcare as well as much-needed household and shelter items. We are extremely concerned about the protection of civilians within this conflict."

In Cabo Delgado, many displaced people have now congregated in small villages and towns, such as Mitambo, Ancuabe and Nanjua, where our teams have been running mobile clinics. However, these villages lack the basic infrastructure to sustain so many people. Jean-Jacques Mandagot, project coordinator, explains:

"In Mitambo, where we conducted mobile clinics and food distributions, the situation became very tense as more and more displaced people arrived. Each day, our team provided more than 200 medical consultations, and we treated more than 2,000 patients in a single week. We saw a lot of people with malaria, coughs, fevers and diarrhoea.

One man told me he had lost all his possessions – his house, his stores of food – leaving him with nothing. He said he was now forced to beg for food, and that he no longer wanted to be near his village or anywhere that would remind him of the life he had lost."

Our teams remain on alert in Mozambique to provide people with emergency medical care.

SOUTH SUDAN FLOODS: THE RACE TO SAVE LIVES

In South Sudan, catastrophic flooding left many communities cut off from healthcare, including 130,000 people living in Bentiu displacement camp. Our hospital in Bentiu is the only option for people needing emergency treatment. Midwife Erin Lever tells the story of a pregnant mother about to give birth, and her family who were determined to bring her to us:

"This year's floods were the worst that South Sudan has witnessed for the past 60 years. They almost surrounded the camp here, and many villages were cut off from everything, including food and healthcare. One night, I received a call that a woman in the final weeks of her pregnancy had arrived with significant bleeding.

Members of her family walked for three hours, through the floodwater, in the middle of the night, carrying her on a blanket. They were sodden and muddy, and looked exhausted. We were amazed at their resilience.

Quickly, we assessed the woman. She was slightly anaemic from the blood loss but otherwise stable, although still bleeding. Her baby, thankfully, was still alive.

We suspected a partial placental abruption, where the placenta starts to separate from the uterine wall before delivery. This can be one of the most critical conditions in pregnancy. It can cause a life-threatening haemorrhage for the mother, and because the flow of blood to the placenta is compromised, the baby can pass away.

During the assessment we found that the woman was already in the early stages of labour, and we got her consent to accelerate the process so that the bleeding stopped and the baby had a better chance of survival. Her labour progressed quickly. Soon her baby was born, but not breathing.

We started resuscitation. This was what we feared – it was likely due to the placenta being only partially functional during labour. At last there was a cry, and a wave of relief broke over me. The baby girl was breathing on her own. She would be fine.

But there was no time to relax: the mother had a heavy postpartum haemorrhage. We started our emergency protocol and it became clear that the woman's condition was unstable and that she would need blood transfusion. The woman's relatives stepped up without hesitation.

A team of Médecins Sans Frontières watsans arrive at Kaljack village in Unity State, South Sudan, to repair a hand pump damaged by flooding. © Sean Sutton, 2022.

It was touching to see them, having been through an immense physical feat to arrive here, now lining up to donate a pint of blood to help us save their relative. By early in the morning, the woman had received three units of blood and it was clear now that she would be okay.

The night shift team went home; alongside this emergency, they had also been attending to the other women in the maternity ward. We were all exhausted."


© Njiiri Karago/MSF, 2021

FACES OF THE FLOODS

The floods over the 2021-2022 rainy season in South Sudan have been the worst in decades. In Bentiu camp we opened a third Inpatient Therapeutic Feeding Centre (ITFC), to cope with an 80 per cent surge in children admitted with malnutrition, and set up a sewage treatment plant.

Our teams are also running mobile clinics in the region, treating malaria, malnutrition and acute watery diarrhoea for people living in precarious conditions.

Nyatuak:

"I have five children, three boys and two girls. I am the father and the mother of my children because my husband was killed during the crisis. We lived in Thardunye before it was taken by water. We do not have anywhere to sleep, or material to cover our house. We are suffering a lot. We do not have anything to do other than gather firewood from the river. We sell it sometimes to survive. I have no job. If I just stay at home, my children will have nothing."

Nyabeel:

Nyabeel brought her one-year-old to our mobile clinic for treatment for severe malnutrition, and essential vaccinations: "We spent three days moving. It was challenging, with four children and a herd of goats. Now we eat one meal a day of maize."

Nyapal:

"Our only source of water for drinking, cooking and washing is the floodwater."

CONTAMINATED WATER CAN KILL

A historical photo of our team testing ore at a mining site in Zamfara, Nigeria, to assess the level of lead. © MSF, 2018

"Six or seven children were dying every day"

In Zamfara State, Nigeria, in the early 2010s, hundreds of children were dying from lead poisoning – their water and the land around it contaminated by unsafe gold mining practices. A vital Médecins Sans Frontières project helped clean up the environment to keep these children safe.

"Artisanal mining had been going on for a decade in this area. People transformed the villages into processing sites and contaminated the environment for many years," says Benjamim Mwangombe, project coordinator.

In March 2010, our teams received an alert about a high number of child fatalities in Zamfara state, where more than 400 children died within just six months in several villages. Laboratory tests confirmed high levels of lead in survivors' blood, which can cause severe brain damage and death in children. Alhaji Muhammadu Bello, head of Dareta village said:

"When Médecins Sans Frontières arrived, we were suffering a lot. In my village, 120 children died. Six or seven were dying every day."

Before we could start treating patients, we worked with communities to remediate contaminated material, so that children would not be continually re-exposed to toxins. A key aspect of the success of the project was the engagement of the communities in which we were working.

"We realised the reason the outbreak happened was because people brought mineral processing to the villages. People didn't have any knowledge on how to mine safely," said Benjamin Mwangombe.

Between 2010 and 2021, our teams screened 8,480 children under five for lead poisoning. More than 80 percent of them were enrolled for treatment, including over 3,500 children who received chelation therapy – a chemical process in which a solution is injected into the bloodstream to remove lead.

Prevention of lead poisoning is the only sustainable long-term solution. In Niger and Zamfara states, our teams worked with local partners to develop and implement safer mining processes. Miners were provided with information and tools to reduce exposure during mining and processing, and to minimise off-site contamination. Almost 12 years after our teams first started intervening in the area, no more children are dying of lead poisoning in Zamfara. State governments say they are committed to scaling up safer mining practices, and in February 2022, we were able to hand over management of the program.

OUR SHIFTING CLIMATE: THE THREAT TO HUMAN HEALTH

"Little by little, Madagascar's southern region became desertified. In 2021, the rainy season never arrived at all. All the crops have been burned by a relentless sun."

– Benjamin Le Dudal, nurse

In Madagascar, drought has wreaked havoc on people's lives and livelihoods. Sandstorms caused by deforestation have covered much of the arable land.

In Somalia, more frequent and intense droughts and floods have caused food insecurity.

And on the southern fringes of the Sahara Desert, the Lake Chad region is receding quickly. This vital water source for millions was once one of Africa's largest lakes. However, overuse and drought mean that the lake has almost disappeared. This has had a catastrophic impact on people's basic needs.

FEAR FOR THE FUTURE IN CHAD

Over the last 10 years, Chad's Saharan and Sahelian zones have spread 150 kilometres south, resulting in reduced farming and pasture areas.

In Massakory, people are leaving due to the bad harvest, and the previous year's unusually short rainy season. A farmer we spoke to, Osman Abakar, explains:

"We are afraid of the future. All we can do is wait for the next rains. If the rain abandons us another time, we do not know what to do."

Our teams launched a nutrition response in the region last year. Lack of clean water adds to the crisis, says villager Khadidja:

"We have two wells in my village, but it is not enough for all the people and animals. I have to pump for five to six minutes to get water. It tastes bad; we mostly give it to the animals. To get drinking water, I go by donkey to another village. It takes me one-and-a half hours each way."

The contaminated water causes diarrhoea and other health issues, increasing the risk of malnutrition.

As well as treating children in therapeutic feeding centres and in Massakory hospital, our teams also visit remote villages in the area to teach mothers how to prevent and detect malnutrition. Ibrahim Barrie, medical team leader reports:

"There is some fear that the worst is yet to come, that the hunger gap will start earlier than usual and that it could be longer and more severe. It is a continuous crisis, no longer just a hunger gap."

SOMALIA: A CASCADE OF EMERGENCIES

Our teams in Somalia are seeing a pattern of one emergency leading to another. More frequent and intense droughts and floods undermine food security and worsen people's livelihoods. This increases competition over scarce resources and exacerbates community tensions and vulnerabilities.

In the southern Gedo and Lower Juba regions, we mounted three emergency responses last year, treating children for severe acute malnutrition, vaccinating against measles, and addressing critical water shortages by providing water to 12 villages. Mohamed Ahmed, project coordinator, said:

"More people are moving in search of food and water, even as the risk of COVID-19 remains and a measles outbreak remains unabated. Communities are also affected as they have lost livestock that have reportedly died of thirst due to water shortages."

Our teams are concerned this pattern is set to continue and get worse over time, explains Mariano Lugli, program manager for Somalia:

"Jubaland is facing a deadly cascade of emergencies. A cycle of droughts, floods and disease outbreaks is taking a toll on people who barely have time to recover from one crisis before another hits."

Our teams are remaining on alert to launch future emergency responses.

WATER, CONFLICT AND DISPLACEMENT

In Hassakeh, northeast Syria, around one million people have had little access to clean water for three years. This is due to disruptions in supply from the Alouk water station, the only sustainable potable water source for the area.

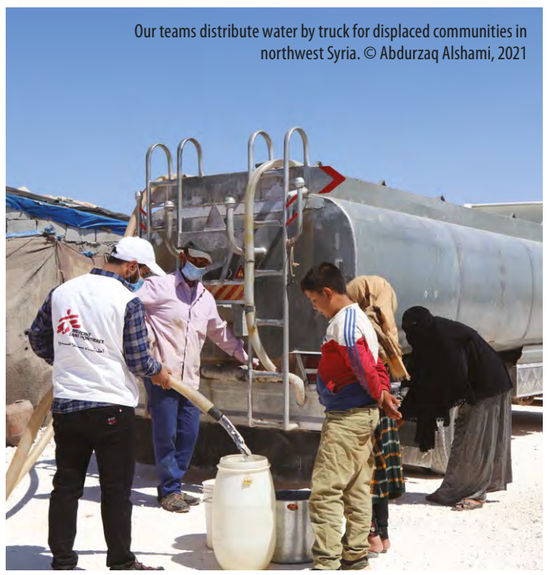
Conflict and military operations have damaged the station's infrastructure, and it has never resumed full capacity. Even when it is working, pumping from Alouk is very weak. This means people receive water on average only every 10 to 20 days.

Our teams have responded by trucking safe water into Hassakeh city. However as Benjamin Mutiso, field coordinator, explains:

"All these initiatives are not permanent fixes. There are still many people who suffer from the consequences of a lack of access to clean water."

We are seeing a steep increase in sickness, especially affecting children. This includes diarrhoea, intestinal infections, vomiting, and dehydration. People are also suffering from skin diseases, mostly due to dependence on well water for showering.

Already hit by economic crisis and increased food prices, over 9,000 people have moved out of their homes and into camps in Hassekeh city, hoping to access better services. But they continue to face overcrowding, deteriorating conditions and lack of basic items. Benjamin adds:



Our teams distribute water by truck for displaced communities in northwest Syria. © Abdurzaq Alshami, 2021

Médecins Sans Frontières doctor Cupidon Priscille speaks to a young mother at a clinic in Parc Celtique camp, Haiti. "I brought my three children for a consultation," she says, "MSF gives us medicines and takes care of us. MSF also gives us soap so we can wash our clothes and bathe." © Pierre Fromentin/MSF, 2021

"People's health is at risk, and they cannot survive if they do not even have access to the basics. There is a need to speed up the allocation of funds and ensure the continuity of water and sanitation activities essential to the survival of the people in northern Syria."

BURKINA FASO: REAL HORROR

Right now there are 82 million refugees and displaced people around the world, more than at any other point in history. For people forced to flee their homes, lack of safe water and sanitation can put them at grave risk of parasitic infections and waterborne diseases, such as cholera, diarrhoea and hepatitis E.

In Burkina Faso, the number of people displaced due to prolonged violence has increased from 47,000 to 1.5 million in just three years. Our teams work in five of Burkina Faso's 13 regions. As a landlocked country with limited rainfall, there is less and less water available for displaced people. In response, we have been drilling wells and trucking in water when necessary.

"I dug a well with my budget and we have been using it for washing. However, it is unhealthy and mixed with mud, but we need to use it. I am lucky my well did not stop yet. In the neighbourhood around 75 percent of the wells stopped working."
– Resident of Hassakeh

"People here have experienced real horror."
– Youssouf Dembélé, coordinator, Burkina Faso

Salamata is now living with her husband and four children in a camp in Barsalogho in the Centre-North region:

"One morning, we saw the whole village emptying. Everyone was running, so we took the children and started to run as well. We were barefoot, but we did not stop for 35 kilometres. It was when we arrived here that we found out that many of our relatives had been killed and our property had been destroyed. We may never see our village again."

The extreme levels of insecurity often prevent people from travelling to see a doctor, while many people cannot afford transport to hospital. At the same time, ongoing violence complicates the work of humanitarian teams. This has left many people struggling to find the basics for survival, explains project coordinator Youssouf Dembélé:

"People are living in very precarious situations, often in camps exposed to bad weather which increases waterborne diseases like malaria and diarrhoea, and respiratory infections. This also puts pressure on the hospitals in the country's urban centres."

In the displacement camps, living conditions are often dire: shelters are not able to withstand the rainy season, and there is a lack of sanitation and access to drinking water. People often have to walk several kilometres and then wait for up to six hours to get enough water to drink, cook and wash.

"This population needs our assistance in terms of water, food, protection, healthcare and shelter." Youssouf concludes.

HAITI: THOUSANDS STRANDED BY VIOLENCE

Violence in Port-au-Prince displaced around 19,000 people in late 2021. Families with young children, people living with disabilities and other vulnerable people are among those who have been violently removed from their homes or forced to flee for safety.

Those who could not seek refuge with friends and family fled to informal displacement sites such as Parc Celtique, one of eight displacement sites set up in schools, stadiums and churches. The unsanitary conditions and overcrowding in these areas pose significant risks to people's physical and mental health and increase existing vulnerabilities. Marie-Jose, a widow, now lives in Parc Celtique with her eight children:

"I was coming back from the city centre when I heard gunfire. I could not even reach the house. All my belongings have gone up in smoke. As everyone in the neighbourhood, I fled and came here. We live in misery; we do not have anything. What we need most is food, latrines and somewhere to sleep."

Our teams are providing healthcare through mobile clinics, as well as water and sanitation in Parc Celtique. There is an urgent need for more humanitarian support for displaced people, says Mariana Cortesi, medical coordinator:

"Many people sleep outdoors on hot or wet concrete without mattresses, and there is a lack of safe drinking water and food. In some sites people do not have access to any latrines. These conditions, paired with overcrowding, are a concern for potential outbreaks of infectious diseases such as diarrhoeal diseases and COVID-19."

THANKS TO YOU

Médecins Sans Frontières' work would not be possible without your continued support for the independent medical humanitarian care we provide for every patient. We are incredibly grateful to you.

You give us the unique ability to scale up response following an emergency or coordinate a completely new intervention within a short time frame, so that patients' medical needs are met.

It means we can set up programs that are diverse, innovative and far-reaching. It means we can respond in some of the world's most conflict-affected and remote regions. It means our medical teams are not held back while we wait for funds to be approved or for a public campaign to launch.

With people increasingly being cut off from life-giving services like water, food and shelter, uprooted by floods or drought, or subject to deadly outbreaks of sickness and disease, we can continue to be there.

With the support of people like you, Médecins Sans Frontières can continue to put patients first.

Thank you for helping us remain strongly independent and ready where we are needed most.

This woman, Salamata, has lived for more than two years in a camp near Barsalogho, Burkina Faso. There are as many as 65,000 people displaced in the area and Médecins Sans Frontières has set up two health centres to ensure they can access medical care. © Seigneur Yves Wilikoesse/MSF, 2021

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Cover: Although floodwaters can carry waste and disease, they are often the only option displaced people can use to bathe, cook and wash. These children near a displacement camp in Barsalogho department, Burkina Faso, show that they can also be a place to play and cool off. © MSF/Marie-Laure Désirée Dagault, 2021