



Médicins Sans Frontières

Cite this as: *BMJ* 2024;387:q2324<http://dx.doi.org/10.1136/bmj.q2324>

Published: 23 October 2024

## Environmental changes in South Sudan are changing the fabric of people's lives and steering humanitarian operations

Elizabeth Wait *health promotion manager and anthropologist*

*“People don't want to leave their homes but they have to move because of water”*

*Murle community representative during a Médecins Sans Frontières (MSF) operational assessment, Lola village, Labarab Payam*

When our team travelled to Labarab Payam in South Sudan to prepare for a multi-antigen vaccination campaign, we saw how communities had been made to up-end their way of life because of climate change. Environmental changes had forced subsistence farmers to switch their formerly sedentary lifestyle to seasonal movement, in patterns that resembled semi-nomadism.

It was March 2024 when Médecins Sans Frontiers (MSF) arrived and many rivers were bone dry from the record-breaking 43°C heat.<sup>1</sup> “We are forced to move from our homes to search for water,” grieved a woman during one of MSF's operational assessments in Batalu village, Labarab Payam. The skin conditions of tinea capitis and tinea corporis are highly prevalent in the region, along with low breastmilk production, morbidities that are exacerbated by water scarcity. MSF has drilled several boreholes to improve water access,<sup>2</sup> countering some of the negative health implications of climate change, but many more are needed.

Soaring daytime temperatures are creating additional barriers to healthcare for pregnant women from semi-nomadic pastoralist communities who must travel 50 km for laboratory tests or to have their babies in hospital. It's estimated that regional temperatures will continue to rise by more than 2.2°C by 2060.<sup>3</sup> “But what is the reason for these hot temperatures?” a Murle community leader asked an MSF employee. Poor access to formal education, and the absence of communications and the internet, means that knowledge of climate change is very limited among the communities in this region. As the largest international humanitarian actor in these remote settings, MSF has already begun helping communities to adapt to the impact of climate change. Questions remain, however, as to whether we have a responsibility to also educate local people to counter the deficit in climate related information.

But when the rains arrive each year and people in Labarab are forced to move to higher ground, there is little deliberation about the role we should have in response to this. MSF is a humanitarian actor well versed in emergency response, and sent teams to assist people affected by severe floods in the region in 2019 and 2020.<sup>4 5</sup> Flood water increases the community's vulnerability to malaria,<sup>6</sup> and for the past few years, MSF has implemented a decentralised model of service provision for malaria in a number

of locations within the eastern Greater Pibor Administrative Area, as well as in other countries affected by climate change.

The model sees community health aids, who have been appointed by communities, provide care. Carrying a backpack full of rapid diagnostic tests and medication for malaria, as well as treatment for other killer diseases such as pneumonia and diarrhoea, the community health aids move with the population, whether assisting semi-nomadic cattle herders or people who are vulnerable to displacement because of water shortages or floods.<sup>7</sup> This form of care provision speeds up access to treatment throughout the wettest months and avoids the logistical challenges of humanitarian teams travelling through boggy waterlogged land that has no established roads.<sup>8</sup>

To prevent malaria transmission and to build the community's resilience against climate change, MSF had planned to distribute mosquito nets that are specially adapted to semi-nomadic populations in 2024. The PermaNet Dumuria withstands damage from sunlight, unlike a typical long-life insecticide net.<sup>9</sup> Yet our carefully scheduled operational plan to register households, issue tokens, distribute these nets, and disseminate the accompanying health information in Maruwa was turned on its head when the rains, which usually start in May every year and continue for several months, were considerably lighter and infrequent. Cattle herders decided to abandon their yearly movement to Maruwa, which was previously reliable grazing land during the rainy season, instead resting in Giro, 57 km north.

These changing weather patterns are steering MSF's activities, and with the timeline for distribution pushed back, MSF has been left with little option but to consider sending convoys of vehicles to transport teams and several thousand heavy mosquito nets to new unexpected locations. Although the communities we want to reach are only a short distance away, they have settled by wet grassland close to rivers for the improved access to water. Even the most dependable 4×4 vehicles can get stuck at this time of year, making the journey difficult.

Environmental changes are also depleting food sources and are the underlying reason for food insecurity among subsistence farmers in Labarab.<sup>3</sup> The delayed antelope migration last year meant that the subsequent foraging and trampling by the animals destroyed the maize crop that people in Tagoniba village depended on. In addition to having to travel for water, these once sedentary communities also often need to scatter far distances to source bush meat to meet their immediate food needs since antelope migration patterns have shifted.

As environmental changes in South Sudan change the fabric of people's lives, MSF's plans for humanitarian and healthcare activities in the region, such as delivering three rounds of inoculation, are now subject to greater alterations in location and timing. In Labarab Payam, the vaccination team is attempting to reach populations whose movements are dictated by water and bush meat availability, steered by unpredictable rhythms of seasons and nature and unfamiliar patterns of rain. These environmental changes dictate humanitarian operations and now demand greater operational flexibility of humanitarian organisations like MSF. Environmental changes occupy the driver's seat—the population can only follow, and so do MSF.

Competing interests: None declared.

Provenance: Not commissioned; not externally peer reviewed.

EW has worked for Médecins Sans Frontières since 2019 and is on her second assignment assisting remote populations in South Sudan.

- 1 Yadav P. March 2024 Sudan Heat Wave Through GEOS-S2S-2. Global Modelling and Assimilation Office. 2024. [https://gmao.gsfc.nasa.gov/research/science\\_snapshots/2024/Yadav\\_Sudan\\_Apr2024/Sudan\\_heatwave.php#:~:text=South%20Sudan%20and%20neighboring%20region,reaching%2045oC%20\(Figure%201\)](https://gmao.gsfc.nasa.gov/research/science_snapshots/2024/Yadav_Sudan_Apr2024/Sudan_heatwave.php#:~:text=South%20Sudan%20and%20neighboring%20region,reaching%2045oC%20(Figure%201))
- 2 Médecins Sans Frontières. World Water Day: MSF brings safe water to remote areas in eastern South Sudan. 22 March 2022. <https://msf.or.ke/sw/node/7104>
- 3 Reach. South Sudan - Socioeconomics, Climatic Hazards, and Community Infrastructure, Pibor County - Jonglei State County Profile. September 2022. <https://reliefweb.int/map/south-sudan/south-sudan-socioeconomics-climatic-hazards-and-community-infrastructure-pibor-county-jonglei-state-county-profile-september-2022>
- 4 Médecins Sans Frontières. People stranded, cut off from care in severe flooding in South Sudan. 21 October 2019. <https://www.msf.org/people-stranded-cut-care-severe-flooding-east-and-northeast-south-sudan>
- 5 Médecins Sans Frontières. Heavy floods threaten the lives of thousands of people in Greater Pibor. 23 September 2020. <https://www.msf.org/heavy-floods-threaten-lives-thousands-people-eastern-south-sudan>
- 6 Androga DA. A literature review about the impact of climate change on malaria in South Sudan. *South Sudan Med J* 2020;13:-95. <http://www.southsudanmedicaljournal.com/archive/december-2020/a-literature-review-about-the-impact-of-climate-change-on-malaria-in-south-sudan.html>
- 7 Stockholm Evaluation Unit. Terms of Reference. 12 April 2024. [https://evaluation.msf.org/sites/default/files/2024-04/msf\\_seu\\_icmev\\_terms\\_of\\_reference.pdf](https://evaluation.msf.org/sites/default/files/2024-04/msf_seu_icmev_terms_of_reference.pdf)
- 8 Médecins Sans Frontières. Malaria, reaching the hard to reach. 2024. <https://www.doctorswith-outdoors.org/what-we-do/medical-issues/malaria>
- 9 Vestergaard. PermaNet Dumuria: Addressing Malaria Challenges Among Nomadic Populations. 18 June 2024. <https://vestergaard.com/blogs/malaria-interventions-nomadic-populations/#post>