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Climate Change Isn't Ending Malaria in East Africa — It's Relocating It. Health Ministries Must Move With It.

Research Team

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The Ask

Sudan, Ethiopia, and their East African neighbors should immediately redirect climate-health surveillance and adaptation financing toward the highland and Rift Valley districts a landmark new attribution study identifies as malaria's fastest-growing frontier — rather than banking on the same study's headline finding that warming reduces malaria on average across the continent. The averages are masking a dangerous local reversal, and the places losing are largely the places least prepared.

Why Now

A study published in *Nature* on 29 July 2026 by Colin Carlson (Yale School of Public Health), Tamma Carleton (UC Berkeley), and co-authors delivers the first attribution-grade answer to a two-decade scientific argument over whether climate change is worsening malaria in Africa (Carbon Brief, 29 July 2026; Yale News, 29 July 2026). The timing matters for two reasons. First, several countries in the region — including Ethiopia, whose Health National Adaptation Plan II is a live planning document — are due to revise climate-health adaptation strategies in the coming budget cycle, and Sudan's own National Adaptation Programme of Action already names malaria as a climate-sensitive threat but predates this attribution methodology entirely (UNFCCC NAPA Sudan; UNDP Climate Change Adaptation). Second, the study's topline number — that climate change has, on net, added just one extra malaria case per 1,000 children across sub-Saharan Africa since 1900, and will likely reduce continent-wide prevalence further as temperatures rise past the mosquito's comfort zone — is exactly the kind of aggregate statistic that invites governments to conclude the climate-malaria problem is resolving itself. It is not. It is moving toward them.

The Evidence

The study's core contribution is methodological: it is the first to apply formal climate-attribution science — comparing the world as it is against a modeled world without human-caused warming — to an infectious disease (Carbon Brief, 29 July 2026). The authors built their model on more than 50,000 childhood blood-test records collected across sub-Saharan Africa from 1900 to 2016, one of the largest and longest disease datasets available anywhere, and combined it with climate models to isolate warming's specific contribution to malaria prevalence from the far larger effects of healthcare access, poverty, and public health policy.

Three findings matter most for East Africa specifically. First, malaria transmission peaks at an



average monthly temperature of 24.9°C and falls off on either side of that threshold — meaning warming pushes prevalence down in places already near or above the mosquito's optimal range, and pushes it up in places that were previously too cool. Second, the geography of "up" is not evenly distributed: the Ethiopian highlands have seen childhood malaria rates rise by more than eight cases per 1,000 children since 1900 as warming has opened previously inhospitable elevations to mosquito populations, and cooler parts of southern Africa show a comparable increase. Rift Valley districts and coastal southern Africa could see prevalence rise by around 20% — roughly 30 additional cases per 1,000 children — by century's end under a middle-of-the-road emissions scenario, even as West and Central Africa see prevalence fall as temperatures exceed the mosquito's tolerance (Carbon Brief, 29 July 2026, citing Carlson et al., *Nature*, 2026). Third, lead author Colin Carlson told Carbon Brief this is "the first study to really confidently answer the highland East Africa debate" — the specific, decades-old scientific dispute over whether warming was driving Kenyan and Ethiopian highland malaria resurgence, a question with direct bearing on health planning in exactly the districts this brief is concerned with.

None of this makes climate change the primary driver of malaria's future — the authors and outside reviewers are emphatic on that point. Dr Janey Messina of the University of Oxford, who was not involved in the study, told Carbon Brief that "effective surveillance, prevention and treatment remain substantially more influential — and more actionable — than climate change alone." Carlson himself estimates that malaria-eradication efforts since 2000 have outweighed climate change's contribution by roughly 200 to one. But "less influential than public health policy" is not the same as "safe to ignore," and the study's district-level maps give governments something they have not had before: a scientifically attributed forecast of exactly where the climate contribution to malaria risk is rising fastest over the next several decades, rather than a continent-wide average that hides it.

Addressing the Counter-Case

The strongest objection to this brief's recommendation is the study's own headline finding: on average, climate change is expected to reduce malaria across sub-Saharan Africa as the century progresses, so why direct scarce adaptation budgets toward a shrinking problem? Three responses. First, "on average" obscures precisely the districts this brief is about — the authors themselves warn against reading continent-wide numbers as a forecast for any specific place, and the East African highlands and Rift Valley are the clearest exception to the aggregate trend, not a marginal one. Second, malaria elimination requires sustained investment regardless of the climate trend, since the same study finds public health measures outweigh climate effects 200-fold; a government that reads "climate change is shrinking malaria" as license to redirect health resources elsewhere risks losing ground that intervention, not warming, was actually holding. Third, health ministries in newly exposed highland zones currently have the least institutional memory of malaria response — decades of low transmission mean weaker surveillance infrastructure, lower clinician familiarity with diagnosis, and thinner stocks of rapid diagnostic



tests and treatment than in historically endemic lowland districts. The risk is not that national malaria burdens rise on paper; it is that a specific, identifiable set of highland and Rift Valley communities face a disease their local health systems are least equipped to recognize.

What 3Bi Recommends, Specifically

First, Ethiopia's Ministry of Health should incorporate the study's district-level attribution maps directly into the next revision cycle of the Health National Adaptation Plan II, prioritizing surveillance and rapid-diagnostic-test pre-positioning in highland woredas identified as newly exposed, rather than treating the existing malaria elimination strategy's lowland-focused resource allocation as a fixed baseline.

Second, Sudan's health authorities should commission an update to the National Adaptation Programme of Action's malaria section using this attribution methodology, since the current NAPA predates attribution-grade climate-health science entirely; Sudan's own highland and transitional-zone districts warrant the same district-level risk mapping Ethiopia and Kenya can now access through the underlying dataset.

Third, regional and East African governments should request that international climate-health financing — including funds mobilized through the health adaptation pillars discussed at recent UNFCCC processes — be explicitly weighted toward newly exposed districts identified by attribution science, rather than allocated by historical burden alone, which by definition underweights areas where risk is rising precisely because it has not yet arrived.

Fourth, before the next rainy season, health ministries in Ethiopia, Kenya, and Rift Valley-adjacent Sudanese states should conduct a rapid clinician-training and diagnostic-capacity audit in highland districts flagged by the study, since the evidence here points to a readiness gap, not only a resource gap.

Sourcing & Contact

Primary source: Carlson, C., Carleton, T., et al. (2026), "The past and future impact of climate change on childhood malaria in Africa," *Nature*, doi:10.1038/s41586-026-10840-w. Reporting: Ayesha Tandon, "Climate change is driving a 'shift' in childhood malaria risk across Africa," *Carbon Brief*, 29 July 2026 (updated 31 July 2026); Meg Dalton, "Climate change is likely worsening childhood malaria, study finds," *Yale News*, 29 July 2026. Background: UNFCCC Sudan National Adaptation Programme of Action; Ethiopia Health National Adaptation Plan II (ATACH Community); WHO World Malaria Report 2025. For follow-up, contact 3Bi's Research Team via 3bisudan.org.



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