TARGET MALARIA
A Vector Control Research Alliance

Press Release

Gene drive technology unlocks innovative potential solutions at the intersection of climate change and public health

Kampala, Uganda, 11 December 2023 – The inaugural 'Day of Health' at the UN Climate Conference (COP-28) highlighted the dramatic impact of climate change on health, diseases and in particular on malaria. Heads of State and climate experts converged in Dubai to emphasise the indisputable link between climate and health, echoing WHO Director-General Dr. Tedros Adhanom Ghebreyesus's statement that climate change is a pressing public health issue.

As we grapple with the harsh reality of half a million lives lost annually to malaria, including a child succumbing every minute in Africa, it is imperative to integrate innovative solutions that address both the disease and its broader public health implications exacerbated by climate change.

The disruptions to malaria services during the COVID-19 pandemic intensified the urgency, leading to increased incidence and mortality rates. While stabilisation efforts have been made, the world is worse off than before the pandemic with 5 million more cases. African countries like Ethiopia, Uganda, and Nigeria bearing the brunt among the top 5 most affected countries.

The recently released World Malaria 2023 report underscores the direct and indirect effects of climate change on malaria transmission and burden. Climate shifts can directly impact malaria transmission, affecting the sensitivity of the malaria parasite and mosquitoes to temperature, rainfall, and humidity. Indirect effects manifest through disruptions to essential health services, supply chain interruptions, population displacement, and rising food insecurity.

Amid these challenges, the genetic modification of mosquitoes emerges as a powerful ally in the fight against malaria. Target Malaria is one of the research projects looking at leveraging a type of genetic modification called “gene drive” to bias the rate of inheritance and affect the fertility of mosquitoes with the goal to reduce their population and the malaria transmission in Africa.

Gene drive mosquitoes would be complementary to existing and new vector control tools, such as insecticide-treated bednets, drugs and vaccines.

As we navigate climate change's impact on mosquito behaviour, it is essential to align innovations with climate adaptability. Research, including our work at Target Malaria, emphasises the evolution of mosquito behaviours due to climate change. This necessitates a shift in focus, urging funders and researchers to prioritise climate-adaptable tools and enhance the availability, affordability, and accessibility of Rapid Diagnostic Tests (RDTs).

Collaboration emerges as a cornerstone in this endeavour. Bridging gaps between diverse disciplines, from weather and climate to public health, entomology, genetics and molecular biology, is imperative. Through collective research, partnerships and evidence-based decision-making, we can unlock innovative African solutions at the intersection of climate change and public health.

Following COP28, it is crucial that African actors play a central role in shaping interventions. This ensures that context-specific strategies resonate with the communities most affected by malaria. Critical success factors include increased financing for malaria research, data-driven strategies, funding for control tools, and strong political commitment.

Africa is most affected by malaria with 94% of cases and 95% of deaths (World Malaria Report, 2023). African policymakers must take a stand against malaria and against climate change as climate strategies will need to be integrated with public health interventions if the continent is to build long-term resilience.

We are hoping that the momentum following COP28 will continue to build to amplify our voices, advocate for inclusive solutions, and catalyse a paradigm shift where climate change is acknowledged not just as an environmental challenge but as a critical public health imperative.

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About Target Malaria

Target Malaria is a not-for-profit research consortium that aims to develop and share new, cost-effective and sustainable genetic technologies to modify mosquitoes and reduce malaria transmission. Our vision is to contribute to a world free of malaria. We aim to achieve excellence in all areas of our work, creating a path for responsible research and development of genetic technologies, such as gene drive. www.targetmalaria.org

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