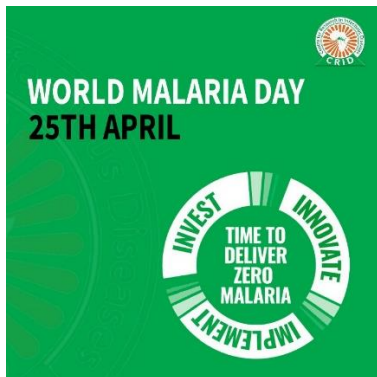


World Malaria Day 2023

The Power of Investing, Innovating, and Implementing in the fight against malaria



This year, the theme proposed by the World Health Organization (WHO) was entitled "Time to deliver zero malaria: invest, innovate, implement." This theme is justified by the fact that there are several threats that limit the efficacy of current malaria control strategies. To deliver zero malaria, new and innovative tools and strategies should be made available, and this is possible if we invest more funding in training and research.

Emerging tools and refined delivery strategies could address current challenges, but support is needed to facilitate rapid adoption and healthy market conditions for sustainable use alongside the mainstays of vector control. According to Professor Cyrille Ndo, Head of the Parasitology and Microbiology Department at CRID, the entire health community's goal is to eliminate malaria. This is possible but will need more investment in funding. For example, the design of new and innovative control strategies and also good implementation of existing malaria control protocols. CRID intends to continue entomological and parasitological malaria surveillance to help generate evidence for accurate decision-making. The partnership between CRID, National Malaria Control Program (NMCP), and other research institutions will be reinforced for better coordination and implementation of malaria control strategies.



CRID is determined to pursue the training of the next generation of young African scientists on malaria biology, genetics, genomics, and modeling. Researchers at CRID, in collaboration with partner institutions, will pursue research activities to design innovative tools and strategies that could help in the coming years to deliver zero malaria. In this relentless struggle,

CRID is playing its part in the fight against malaria through research activities to study malaria parasite and vector biology, which is crucial for designing and implementing control strategies. In this area, key activities carried out focus on the study of anopheles mosquito behavior and competence, characterization of insecticide resistance profile, intensity and mechanisms in malaria vector populations, evaluation of long-lasting insecticide net efficacy, genomic surveillance of drug resistance in Plasmodium, and evaluation of the performance of rapid diagnosis tests. In addition, CRID ensures the training of research staff and students on malaria parasitology and entomology and participates in policy-making through collaborations with national and international partners.

Malaria remains a devastating disease in the world. Nearly half of the world's population is at risk, particularly in Africa where more than 95% of cases occur. Prevention still primarily relies on vector control through the use of insecticide-based interventions, including impregnated nets, which have significantly reduced malaria's burden in Africa since their introduction. Given this heavy reliance on insecticide-based strategies for malaria vector control, the spread of Insecticide Resistance (IR) across sub-Saharan Africa threatens the long-term effectiveness of these strategies. Since 2010, resistance to at least one class of insecticide has been reported in sixty-one countries. Detecting and monitoring levels of resistance, and understanding the added value that different tools can offer in these settings, is critical as national malaria programs consider what intervention mixes may be the most impactful in their country. Interventions recommended by WHO for large-scale deployment also face constraints when it comes to reducing outdoor malaria transmission, as Indoor Residual Spraying (IRS) and Insecticide-Treated Nets (ITNs) are more effective against indoor biting and resting mosquitoes.

Another emerging threat is the spread of *Anopheles stephensi*, a highly adaptable mosquito species and malaria vector that readily breeds in a range of habitats, including urban environments. Generally, malaria is most common in rural areas in Africa, but as powerful forces like rural poverty and climate change increasingly drive urban migration, the spread of *Anopheles stephensi* could lead to unprecedented increases in malaria transmission. Recent modelling drawing on data from the expansion of *Anopheles stephensi* in Djibouti and Ethiopia suggests that *Plasmodium falciparum* malaria cases could increase by 50% if no additional interventions are implemented.

Established since 2007 by WHO member states, World Malaria Day aims to highlight the need to continue malaria prevention and control efforts in Africa.