Target Malaria: Ghana

Who we are?

Target Malaria is a not-for-profit research consortium that aims to develop and share new technologies for malaria control. The University of Ghana, Legon is a collaborating partner.

Our work

Target Malaria's vision is to contribute to a world free of malaria.

Our approach is malaria control by mosquito control. By reducing the population of malaria mosquitoes, we aim to reduce the transmission of the disease.

We aim to develop a technology that can be complementary to other mosquito control methods and which offers a solution that is long term, cost-effective and sustainable.

Target Malaria includes institutions in Africa, Europe and North America. The project is currently working in four African countries:

- Ghana: University of Ghana
- Burkina Faso : Institut de Recherche en Sciences de la Santé (IRSS)
- Cabo Verde : Instituto Nacional de Saúde Pública de Cabo Verde (INSP)
- Mali : Centre de Recherche et de Formation pour le paludisme (MRTC)
- Uganda: Uganda Virus Research Institute (UVRI)

Context

Malaria places a heavy burden on Ghana's public health system and economy.
Out of Ghana's population of 31 million people, 7,087,000 were infected in 2020. (WHO, World Malaria Report, 2021)

According to the WHO, out of the **627,000** people who died of malaria in 2020, **Ghana accounted** for **13,300** of them.

Current efforts to tackle malaria have reduced deaths but morbidity and mortality remains high. Additional tools are needed and Target Malaria is working within this context to complement existing efforts.

TARGET MALARIA

Our activities in Ghana

Insectary & laboratory

Target Malaria Ghana has built an insectary and laboratory space to enhance infrastructure for mosquito research in a manner consistent with internationally recognised practice. We will use this laboratory space to investigate optimal rearing conditions that enhance male mosquito fitness.

Ecology

This study aims at better understanding the ecological role of *An. gambiae* in their community. This is done via:

- Identification and characterisation of niches as well as the interactions within the niches.
- Unravelling of the role of *Anopheles gambiae* in food webs and the provision of ecological services.
- Investigating whether mosquitoes pollinate plants and which kinds of plants they pollinate.
- Using the data produced from above to predict what could happen to other life forms if malaria mosquito populations were significantly reduced.

Stakeholder Engagement

- Inform and engage stakeholders around the insectary, in the two project communities, at the district, regional and national levels about the project activities to ensure transparency and acceptance.
- Feedback to stakeholders about project progress and activities taking into account their views, opinions and concerns.
- Assuring stakeholders that their concerns are taken into consideration.

Entomology

This study aims to develop protocols for rearing, transporting and releasing male mosquitoes. This is done via the:

- Development of larval rearing conditions that maximise the survival of mass-produced *Anopheles gambiae* males.
- Testing rearing protocols that boost male mating competitiveness and mate choosiness.
- Improvement of methods for packaging, transporting and releasing of mass-produced males to minimise negative effects on male survival and mating competitiveness.

Our priorities

Ghana is undertaking extensive studies on *Anopheles gambiae* mosquito behaviour and ecology in order to determine possible ecological effects of reducing or eliminating *Anopheles gambiae* as well as optimising male mosquito rearing protocols to make them fit to compete in the wild.

- Conduct baseline studies in field sites and laboratory to better understand mosquito populations, dynamics and behaviour.
- Optimise rearing protocols for male mosquito fitness.

- Improve understanding of the ecology of *Anopheles gambiae* and the species' role in the ecosystem.
- Create awareness about malaria and the project.
- Engage stakeholders at the community, district, regional and national level in Ghana.

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