

សម្រាប់អនាគត: ប្រយុទ្ធប្រឆាំងនឹងជំងឺគ្រុនចាញ់
in the Future: Defeat Malaria

Malaria Consortium staff inspecting the guppy fish at a village health volunteer's home

PROJECT BRIEF

Implementing integrated vector management for dengue control in Cambodia: Community perceptions and policy development

This project will evaluate viable alternatives for dengue vector control in Cambodia and will establish a set of useful policy recommendations for the Ministry of Health in order to reduce the prevalence of the disease.

Project outline

Dengue is an endemic disease in Cambodia, with almost 200,000 cases being reported between 1980 and 2008. It is caused by the dengue virus, which is primarily carried and transmitted by the mosquito *Aedes aegypti*. Without a cure or vaccine, the best methods for preventing new infections are through vector control and avoidance of mosquito bites.

Currently, the National Dengue Control Programme (NDCP) in Cambodia focuses on two main interventions for vector control. The first involves the use of Abate, a larvicide, and the other uses Bti, which is a group of bacteria used as a biological control agent. However, while previously effective, Abate has proven to be prone to resistance: recent unpublished studies report that mosquitos in seven of the eight provinces tested have acquired resistance. Bti has also proved effective but is prohibitively expensive without external funding. Therefore, there is an urgent need to find an alternative, low-cost solution for controlling the *Aedes* vector which is effective and feasible for routine use by the NDCP.

Several possible alternatives have emerged. For large water storage containers, the use of guppy fish (*Poecilia reticulata*) to reduce dengue vector populations shows promise. In Cambodia and Laos, it has been demonstrated that the use of guppy fish is a low-cost, sustainable and effective approach

Country

Cambodia (Kampong Cham Province)

Donor

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

UK Department for International Development

Length of project

September 2014 to November 2016

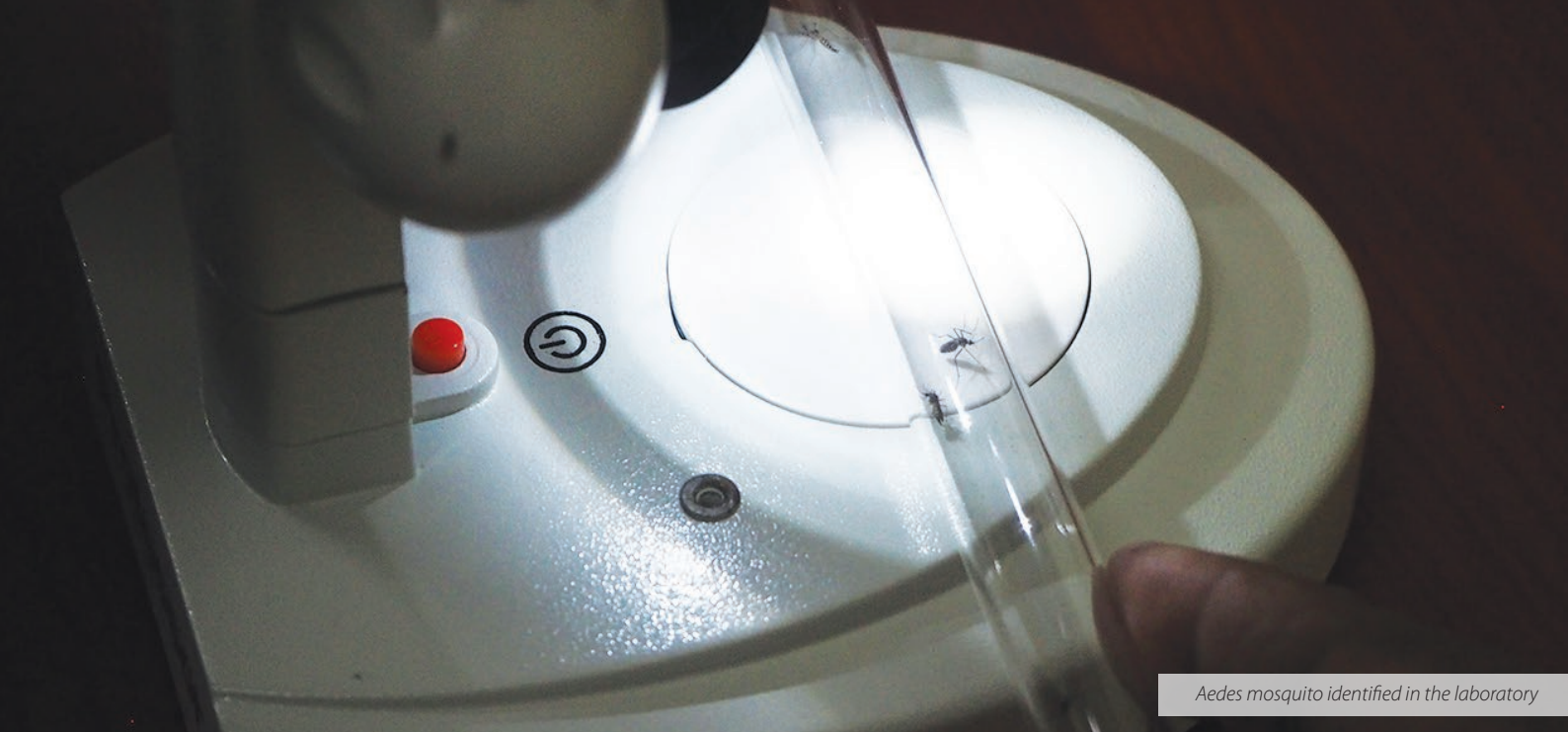
Partners

World Health Organization, Cambodia

National Centre for Parasitology, Entomology, and Malaria Control (CNM)

London School of Hygiene and Tropical Medicine





Aedes mosquito identified in the laboratory

to reduce dengue vector populations. However, for smaller containers, another approach must be considered, as guppy fish often cannot effectively live and breed in containers of less than 50 litres. To confront this obstacle, other biological control methods will be trialed.

In addition to guppy fish and other biological controls, effective vector control requires sustainable behaviour changes among the populations who are most at risk of contracting dengue. Malaria Consortium is utilising a strategy called Communication for Behaviour Impact (COMBI), which outlines a social mobilisation and communication approach that connects knowledge and behaviour, addresses the value of engaging in healthy behaviours, and recognises the gradual stages of behaviour change. By pursuing behaviour change initiatives, we will ensure that preventive measures are accepted and practiced by the local communities. The efficacy of our COMBI activities will be assessed through knowledge, attitudes, and practice surveys and focus group discussions.

This project will not only assess the efficacy of the chosen vector control methods, but also the acceptability and cost-effectiveness of such measures. Acceptability will be evaluated through a mixed method acceptability study. A cost-effectiveness analysis will also be conducted to evaluate the economic impact and disability costs averted as a result of several different combinations of interventions. The results will be used to produce policy recommendations for the NDCP. If shown to be cost-effective and acceptable by the community, this approach could prove to be a useful tool for combating dengue in Cambodia.

Project objectives

- » Determine efficacy of guppies and biological controls for controlling dengue transmission through entomological surveys
- » Survey knowledge, attitudes, and practices surrounding water use and vector-borne disease prevention to guide and evaluate communication and behaviour change interventions
- » Investigate the acceptability of guppies and other control methods among the target villages to determine future uptake and willingness to pay for such interventions
- » Model cost-effectiveness to provide sound evidence for policy and decision making by the Cambodian government
- » Create evidence-based policy recommendations that will lead to a reduction in *Aedes* mosquitoes and lower the burden of dengue in Cambodia

This project supports efforts to deliver:

- ✓ *Control of neglected tropical diseases*
- ✓ *Behaviour change communication / Information, education and communication*
- ✓ *Monitoring & evaluation*
- ✓ *Policy change / advocacy*
- ✓ *Support for at-risk populations*



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Malaria Consortium

Development House 56-64 Leonard Street,

London EC2A 4LT, United Kingdom

info@malariaconsortium.org / www.malariaconsortium.org

UK Registered Charity No: 1099776

Malaria Consortium Regional Office for Asia

Room No. 805, Faculty of Tropical

Medicine, Mahidol University,

420/6 Rajavidhi Road

Bangkok 10400, Thailand

malaria consortium

disease control, better health