

Press Release issued by African Centre for Biodiversity, Third World Network and GeneWatch UK
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No benefit to imminent release of risky GM mosquitoes in Burkina Faso

Genetically modified (GM) “male-sterile” mosquitoes are due to be released in Burkina Faso this year by the Target Malaria research consortium. However, Target Malaria acknowledges that there are no benefits to the proposed GM mosquito release.

The project is set to apply for a permit to make an open release of 10,000 GM *Anopheles gambiae* mosquitoes: most likely in the village of Bana, west of Bobo Dioulasso.ⁱ The GM mosquitoes were exported from Imperial College in London to Burkina Faso in November 2016 and are currently in “contained use” facilities.

The open release is intended to test the infrastructure and systems for future release for, as yet, experimental technologies, notably “gene drive” mosquitoes. Target Malaria’s ultimate aim is to make open releases of gene drive mosquitoes, with the aim of reducing the population of *Anopheles gambiae* mosquitoes, which can transmit the parasite that causes malaria. The hope is that reducing the mosquito population will reduce the risk of malaria transmission and hence disease incidence.

Malaria is a serious public health issue, affecting millions of people annually. Africa continues to carry a disproportionately high share of the global malaria burden, although since 2000, the malaria death rates in Africa have decreased by 66% among all age groups, and by 71% among children.ⁱⁱ The declines in malaria incidence and deaths are attributable to extensive and effective use of insecticide treated bed-nets. The search for solutions, particularly for vector control, nevertheless continues, due to resistance to the insecticide used in bed-nets.

However, the proposed release of GM male-sterile mosquitoes in 2018, meant to only be for experimental purposes, is not expected to deliver any benefits for malaria control in Burkina Faso. This is because repeated large releases would be needed to seek to suppress the wild population of mosquitoes, which, even if successful, would be prohibitively expensive.

“Conducting experiments with no potential benefit may be regarded as a waste of time and money,” said Lim Li Ching, Senior Researcher from the Third World Network. “Furthermore, medical research that poses risks but brings no benefits is unethical”ⁱⁱⁱ.

Some of the likely risks of releasing GM male-sterile mosquitoes into the open include the inadvertent release of biting female mosquitoes, as a result of imperfect sex sorting of mosquitoes; or the possible failure of the sterility mechanism.

Although Target Malaria claims to be engaging local populations and obtaining their consent, consent must be fully informed to meet ethical requirements. This cannot be the case until a comprehensive risk assessment has been published and been subject to open and transparent public consultation. Any decision on open releases of GM mosquitoes requires public consultation, as mandated by the Cartagena Protocol on Biosafety, to which Burkina Faso is a Party.

“Releasing risky GM mosquitoes into the environment, for absolutely no benefit whatsoever, is completely unacceptable”, said Mariam Mayet, Executive Director of the African Centre for Biodiversity. “We call for the application to be immediately withdrawn, or rejected by the authorities in Burkina Faso”.

The main challenges to malaria control are a lack of sustainable and predictable funding, conflict in malaria-endemic areas, and changes in climate patterns.^{iv} What is needed is a more holistic approach to significantly and sustainably decrease the burden of malaria – one that integrates interventions and research on health, climate, agriculture (and eventually economics and housing) – in tackling the main factors contributing to the disease and its transmission.^v

"The proposed release of GM mosquitoes in Burkina Faso is an expensive PR stunt which will do nothing to help to reduce malaria", said Dr Helen Wallace, Director of GeneWatch UK, "This is a distraction, a false solution, and a major opportunity cost".

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Notes to Editors:

1. Target Malaria is a consortium of research institutes that receives core funding from the Bill & Melinda Gates Foundation and the Open Philanthropy Project Fund, an advised fund of Silicon Valley Community Foundation. Individual laboratories also receive additional funding from a variety of sources to support each laboratory's work, including the United Kingdom government (the UK Department of Environment, Food and Rural Affairs and the Medical Research Council), the Wellcome Trust (a UK-based charity), the European Commission, the Ugandan Ministry of Health, and the Uganda National Council for Science and Technology (UNCST). (See <http://targetmalaria.org/who-we-are/>)

2. "Gene drive" is a way of trying to spread genetically engineered traits through a whole population of plants or animals. In the Target Malaria project, the aim of the gene drive is to spread a genetic trait that biases the sex ratio of the mosquito population towards male mosquitoes, thus suppressing the mosquito population. However, the technology to do so does not yet exist and may not be successful. There have been many warnings, including from scientists working in the area of gene drive, that gene drive may be uncontrollable and could have unintended consequences, and civil society organisations have called for a moratorium on this technique. (See <http://www.etcgroup.org/content/160-global-groups-call-moratorium-new-genetic-extinction-technology-un-convention>)

3. *GM Mosquitoes in Burkina Faso* is a briefing paper published by the African Centre for Biodiversity, Third World Network and GeneWatch UK. It is available (in English and French) at https://acbio.org.za/wp-content/uploads/2018/02/GM_mosquitoes_in_Burkina_Faso_ENGLISH.pdf

https://acbio.org.za/wp-content/uploads/2018/02/Moustiques_génétiquement_modifiés_au_Burkina_Faso_FRE_NCH.pdf

ⁱ In a remote West African village, a revolutionary genetic experiment is on its way - if residents agree to it. STAT News. 14th March 2017. <https://www.statnews.com/2017/03/14/malaria-mosquitoes-burkina-faso/>

ⁱⁱ African Leaders' Malaria (ALMA) Malaria in Africa factsheet. http://alma2030.org/sites/default/files/reference-document/malaria_fact_sheet_0.pdf

iii WMA Declaration of Helsinki – Ethical Principles for Medical Research Involving Human Subjects.
<https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/>

iv World Malaria Report 2017, World Health Organization, Geneva.
http://www.who.int/malaria/publications/world_malaria_report/en/

v A more holistic response to malaria is overdue, April 22, 2016
<http://blogs.bmj.com/bmj/2016/04/22/estrella-lasry-a-more-holistic-response-to-malaria-is-overdue/>