Addressing the market failures in anti-malaria product development

A lack of commercial perspectives has meant the marketable pipeline for interventions against malaria is too narrow. A new funding facility will bring innovative biotech to the domain by mediating its initial financial risk.

Holm Keller doesn’t pull his punches. Progress the world has made in responding to malaria has stalled, he says. To combat malaria, the transmission of the disease needs to be confronted.

“Quite simply, there is a market failure around the development of interventions against malaria,” says Keller, Executive Chairman of kENUP, a non-profit organisation. Together with public promotional banks, kENUP promotes innovative approaches to product development with the aim to control some of the world’s most lethal infectious diseases.

“There is high risk in product development and little profit associated with diseases primarily affecting the global south, like malaria. So, once a project leaves academia, companies are usually not investing.”

Moreover, many institutions have slowed down or halted their malaria projects in anticipation of the highly-invested RTS,S vaccine, which is still work in progress and now in pilot programmes in two countries. In the therapeutic market, the world also holds many eggs in one basket: with artemisinin-based combination therapies (ACTs), reliance is on a single therapeutic intervention that really works - and which is procured in huge volumes from very few manufacturers. In parallel, mainly cost-driven procurement procedures also lead to fewer and fewer suppliers being engaged in diagnostics.

Incentivising commercial investment

Plainly, healthcare companies need to be better incentivised to invest in this space if malaria prevention, diagnosis and treatment is to advance. “We need to enlarge the malaria vaccine and therapeutics pipeline,” says Keller. “Despite the seriousness of this disease, not enough companies are seriously engaged”.

Alongside the European Investment Bank (EIB), kENUP is initiating a €240 million financing facility called the EU Malaria Fund. By providing funds to a portfolio of projects in commercial development, the EU Malaria Fund aims to balance the risk of failure, or, more optimistically, increase the chance of success.

Supporting a risk-balanced portfolio of projects

The fund builds on an initial portfolio of scientifically independent malaria projects not yet pursued by industry, run by leading companies including spin-offs from renowned research organisations, SMEs, and start-ups. Projects include vaccines, field test kits and therapeutics, including monoclonal antibodies and new drug targets.

The projects will target different parts of the parasite life cycle and leverage progress in the scientific community through a variety of approaches and research platforms.

Providing milestone-based venture loans

Companies will receive funding in installments, only getting more if their project reaches the next stage of development. “Funds are given as venture loans, which only need to be paid back if a project is successful,” says Keller. “This is why it’s only available to companies, and not universities or research institutions. If a potential product fails, the loan will be converted into a grant.”

Fifty per cent of the money from the EU Malaria Fund is expected to be provided by public and charitable sources from Europe. The remaining is being raised from impact investors, who will reasonably expect their money back (although this is not guaranteed), potentially even with a modest return.

“If the pilot of this financing facility is successful, it could be replicated for other areas where there are similar market failures, such as the field of antimicrobial resistance,” says Keller. “And even if the fund doesn’t create a blockbuster intervention, we hope that will be a much more impactful response to malaria than depending on academia alone: by engaging innovative biotechnology companies that otherwise couldn’t bear the risk.”

How we co-develop our new vector control tool for malaria

My team in Mali is part of an international, not-for-profit research consortium called Target Malaria. We are part of an effort to combat malaria at its source, by targeting the mosquitoes themselves; the Anopheles gambiae complex.

Our aim is to develop and share an innovative vector control tool that reduces the population of malaria mosquitoes in sub-Saharan Africa and hopefully reduces the transmission of the disease. A vector refers to an organism – typically a biting insect or tick, that transmits a disease or parasite between humans or from animals to humans. This vector control tool would be complementary to the ones already existing and to any new ones under development.

The success of our research will not only be measured by our scientific achievements but also by the acceptance and involvement of affected communities in our research. As a project, we are committed to developing something that is useful and responds to the expectations of communities living with the burden of malaria.

We work closely with local communities

Co-development is at the heart of our work. We want to make sure our new tool meets the needs of the affected populations and we can only do this by involving them in our efforts and research activities. Since the start of the project in Mali in 2012, Target Malaria has engaged various, in-country stakeholders with a specific focus on local communities where we conduct our research activities. In the communities where we work, we are – at this stage – mainly focused on mosquito collections and engagement activities. Mosquito collections are necessary to gather baseline data on mosquito population and dynamics. Engagement is necessary to seek consent and/or acceptance for those activities.

To explain, in complete transparency, our research and inform them on our progress. This engagement is extended to the regional and the national level (including but not limited to national authorities, civil society and the media to disseminate information on several levels).

Translating our scientific progress to local communities can be complex

With the development of new technologies come new challenges. For our team in Mali, we had to ask ourselves how to best communicate our advancements in science to local communities in the local language. Science can be complex to translate into easily understandable and accessible terms. All languages have their nuances and we wanted to make sure we had the right words to convey the right concepts.

Our team worked with local communities and the National Directorate for Non-Formal Education and National Languages (DNEF - LN) to develop a glossary, which has since become the basis of engagement in local language. All the concepts and terms present in our glossary have been validated with the communities and we believe this has strengthened our relationship and communication with local stakeholders. We continue to work on translating scientific concepts to make our results dynamic as we move forward.

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DR MAMADOU COULIBALY
Head of Vector Genomics Lab and Principal Investigator, Target Malaria Mali

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