



## Policy Brief

# EU-led partnerships for global health innovation and equity

**V**ector-borne diseases like malaria, dengue and Zika represent a major health and economic burden, especially in low- and middle-income countries. They account for more than 17% of all infectious diseases and cause over 700,000 deaths a year. Under growing pressure from climate change, insecticide resistance, and constrained public health financing, existing tools alone are unlikely to achieve long-term control and elimination. New approaches are needed to work alongside vaccines, diagnostics, medicines and conventional vector control, particularly where current interventions are losing effectiveness or are difficult to sustain. For the European Union (EU), supporting innovation in this field is not only a global health imperative but also a strategic investment in health preparedness, scientific leadership and innovation capacity.

### POLICY RECOMMENDATIONS

The EU and its Member States can support an enabling environment for innovations that advance health equity by investing in the partnerships, skills, infrastructure and regulatory preparedness that are essential for developing and assessing new tools for vector-borne disease control.

- **Connect European and African researchers.** Support joint training, fellowships and exchange schemes between European and African institutions working on vector biology, genetics, biosafety and public health. Building on existing models of researcher-to-researcher collaboration, the EU and its member states should scale up proven frameworks that strengthen African scientific leadership while enhancing European scientific excellence.
- **Fund African-led research through existing European Union instruments.** Use the next [Framework Programme for Research and Innovation](#) and [Global Health EDCTP3](#) to support African-led research and capacity-building on innovative vector control tools, aligned with priorities identified by African partners and with long-term regulatory preparedness to strengthen African health sovereignty.
- **Support regional regulatory coordination.** Work with African regional bodies and networks to strengthen coordination on risk assessment, regulatory standards and monitoring for new vector control tools. Backing regional platforms and joint approaches can reduce fragmentation, speed up decision-making, and ensure that stepwise evaluation and potential deployment are governed in a coherent way across borders.



### Investing in innovation for a changing disease landscape

The EU's involvement in innovative health research is crucial for addressing vector-borne diseases abroad, where most cases are concentrated, but also in Europe itself. In 2024, approximately 300 locally acquired dengue cases were reported in the European Union and European Economic Area, up from 130 in 2023. In 2014, there were only 4 such cases. At the same time, locally acquired cases of other vector-borne diseases, including chikungunya and West Nile virus, have been reported across Southern Europe, including Italy and Greece. Since 2025, the Health Emergency Preparedness and Response (HERA) has established vector-borne diseases as a priority for the EU to develop medical countermeasures to this rising threat.

With rising temperatures and changing environmental conditions, vectors such as Aedes mosquitoes are expected to expand further north and persist for longer transmission seasons, increasing the risk of outbreaks across parts of Southern and Western Europe. There is also growing evidence that climate conditions suitable for seasonal malaria transmission could re-emerge in parts of Europe under future warming scenarios. In this context, prioritizing further research and development of new tools,

in partnership with countries where these diseases remain endemic, both advances the EU's global health commitments and strengthens its long-term preparedness.

**Recent innovations in genetics open new possibilities for novel vector control tools. Amongst these, technologies that use a genetic phenomenon known as "gene drive" could offer new approaches to control vector borne diseases in a manner that is long term, cost effective and self-sustaining.** Using "gene drive", researchers have been able to spread a desirable trait through a specific population. This can, for example, help reduce the number of insects that transmit a particular disease or inhibit transmission of the disease itself. Research is currently more advanced for malaria, but the approach could also be applied to other vector-borne diseases. Gene drive systems are under active investigation in African research institutions, many in partnership with EU-based organizations. Advancing this work is closely aligned with EU global health priorities, which place partnership with African countries at the center of efforts to tackle infectious disease burdens, support innovation in public health, and strengthen African health sovereignty.

### Why do global partnerships matter for the EU?

The 2022 [EU Global Health Strategy](#) and the [AU-EU Innovation Agenda](#) both position international cooperation on health innovation as a strategic priority in a changing global risk landscape. EU–Africa collaboration has since deepened around shared objectives, including strengthening health systems, advancing local production, and supporting greater health sovereignty. Reducing the burden of endemic infectious diseases is central to these efforts, with clear implications for economic development and regional stability.

For the EU, these partnerships are not only a development instrument but a strategic asset. They strengthen Europe’s scientific leadership and biotechnology ecosystem, while improving preparedness for vector-borne diseases that are already affecting parts of its territory and are expected to expand under climate change. In line with the EU’s broader ambition to position itself as a global leader in biotechnology and life sciences, European research institutions are at the forefront of innovation in vaccines,

diagnostics, and vector control, including approaches such as genetic technologies, and depend on international collaboration to sustain this work.

Partnerships are also a precondition for effective research and innovation. They connect European institutions with expertise and knowledge of the settings where disease burden is highest, making research more robust, efficient and relevant. At the same time, they help build the regulatory and institutional frameworks needed to assess and, where appropriate, use new tools. Longstanding initiatives such as the [European & Developing Countries Clinical Trials Partnership](#) (EDCTP), now [Global Health EDCTP3](#), show how jointly governed EU-Africa platforms can deliver new products, strengthen regulatory systems, and leave a lasting legacy in skills, infrastructure and networks. This advances African health priorities while reinforcing the EU’s health security, scientific leadership and wider strategic priorities.





## PARTNERSHIP IS ALREADY AT THE CORE OF GENE DRIVE RESEARCH

**Target Malaria** brings together six partner institutions and around 200 experts across Africa, Europe and North America. The project has a long track record of capacity-building: Target Malaria has supported over 35 PhDs, 55 MScs and 7 internships, and runs ongoing training programs in entomology, molecular biology, bioinformatics and stakeholder engagement. In 2019, the partnership achieved a key milestone with the [first release of non-gene drive genetically modified mosquitoes in Africa](#), in Burkina Faso, demonstrating how sustained collaboration can help build the regulatory and operational capacity needed for stepwise testing of new vector control tools. In Uganda, Target Malaria's work is led by the Uganda Virus Research Institute ([UVRI](#)), where a new Arthropod Containment Level 2 insectary inaugurated in 2019 now hosts contained studies on a non-gene drive "male bias" strain of genetically modified *Anopheles gambiae*, imported in 2024 to build national capacity and generate data on mosquito behaviour and modification performance under containment.

**Polo GGB** (Polo d'Innovazione di Genomica, Genetica e Biologia) in Italy has been part of Target Malaria since 2015 and provides a Genetics and Ecology Research Centre in Terni with insectary and large cage facilities. Data generated at Polo GGB informs technology design and supports data generation for regulatory dossiers presented to African authorities. Italy's historical experience, including WHO certification as malaria free in 1970, also positions Italian institutions as credible, experienced partners on both the science and governance of elimination.

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**Transmission Zero** is another example of partnership between Europe and countries where malaria remains endemic. The program is based at [Imperial College London](#) in the United Kingdom and the [Ifakara Health Institute](#) in Tanzania, with partnerships including the [Tanzania National Institute for Medical Research](#) and the [Swiss Tropical and Public Health Institute](#). The project brings together scientific collaboration, in-country research capacity and infrastructure to support the development of new genetic tools for malaria elimination.

Initiatives include training for Master's and PhD students to create a critical mass of scientists in Tanzania and offers gene-editing courses (e.g. CRISPR/Cas9) in collaboration with the [University of Dar es Salaam](#), alongside regular trainings and webinars. In 2023, the program achieved a [major milestone](#) by developing the first genetically modified mosquito in Africa. Researchers in Tanzania demonstrated in laboratory containment that the modified mosquitoes could effectively block the development of malaria parasites, potentially reducing disease transmission.

**The University of California Malaria Initiative (UCMI)** further illustrates the global nature of gene drive research partnerships. UCMI brings together a network of collaborators across the United States, São Tomé and Príncipe, Equatorial Guinea and Portugal, including collaboration with research teams at the Lisbon Institute of Hygiene and Tropical Medicine (**IHMT**). Through these partnerships, the initiative supports research on mosquito biology, vector control strategies and capacity strengthening, contributing to a wider ecosystem of institutions working collectively toward malaria elimination.

In São Tomé and Príncipe, this has included the development of a molecular biology research laboratory with the University of São Tomé and Príncipe (**USTP**), as well as advanced-degree scholarships for local students to study medical entomology and molecular biology at IHMT, underscoring the role of partnerships in building shared research infrastructure and human capacity across countries.

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The **European & Developing Countries Clinical Trials Partnership (EDCTP)**, now **Global Health EDCTP3**, is a long-standing EU–Africa public-public partnership and a key implementing partner of the AU–EU Innovation Agenda. With a total budget of €1.84 billion across its phases, it supports clinical research on poverty-related and emerging infectious diseases while strengthening institutional and regulatory capacity in sub-Saharan Africa.

Across EDCTP1 and EDCTP2, the partnership has funded more than 470 clinical studies, supported over 1,700 peer-reviewed publications, and awarded 262 fellowship grants and 1,381 trainee positions for African researchers. It has also issued 156 grants to strengthen ethics and regulatory systems, contributing to WHO-endorsed diagnostics and regional epidemic-preparedness networks, and providing a model for jointly governed EU-Africa platforms that can be applied to innovative tools for vector-borne diseases, including gene drive. EDCTP's model also emphasizes joint African–European leadership in funded consortia, reinforcing shared agenda-setting across partner countries.

## CONCLUSION

Innovative tools are needed to meet long-term control and elimination goals for vector-borne diseases in the face of climate change, insecticide resistance and financial constraints. European research institutions are contributing to their development, including emerging genetic technologies such as gene drive, in close collaboration with partners in countries where these diseases remain endemic.

Their development and potential use depend on international and regional partnerships that combine scientific expertise, regulatory capacity and operational experience. Ensuring that African scientific institutions and public health agencies play a leading role is essential both for supporting Africa's health sovereignty and for strengthening Europe's health security and research leadership in health innovation.

## REFERENCES

- African Union Commission & European Commission. (2023). The AU–EU Innovation Agenda. Brussels and Addis Ababa. [https://research-and-innovation.ec.europa.eu/system/files/2023-07/ec\\_rtd\\_au-eu-innovation-agenda-final-version.pdf](https://research-and-innovation.ec.europa.eu/system/files/2023-07/ec_rtd_au-eu-innovation-agenda-final-version.pdf)
- American Society for Microbiology. (2022, July 15). Vector-borne disease in a changing climate. <https://asm.org/webinars/vector-borne-disease-in-a-changing-climate>
- Brady, O. J., & Hay, S. I. (2019). The first local cases of Zika virus in Europe. *The Lancet*, 394(10213), 1991–1992. [https://doi.org/10.1016/S0140-6736\(19\)32790-4](https://doi.org/10.1016/S0140-6736(19)32790-4)
- European Centre for Disease Prevention and Control. (2024). Historical data on local transmission of dengue in the EU/EEA. ECDC. <https://www.ecdc.europa.eu/en/dengue-fever/surveillance-and-disease-data>
- European Commission. (2022). EU Global Health Strategy: Better health for all in a changing world (COM(2022) 657 final). Publications Office of the European Union. [https://health.ec.europa.eu/system/files/2023-10/international\\_ghs-report-2022\\_en.pdf](https://health.ec.europa.eu/system/files/2023-10/international_ghs-report-2022_en.pdf)
- European Commission. (2025, July 9). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Preparing the EU for the next health crisis: A Medical Countermeasures Strategy (COM(2025) 529 final). [https://health.ec.europa.eu/document/download/1be3e462-bd50-4c64-b147-add9d1d5a580\\_en?filename=com\\_2025-529-1\\_act\\_en.pdf](https://health.ec.europa.eu/document/download/1be3e462-bd50-4c64-b147-add9d1d5a580_en?filename=com_2025-529-1_act_en.pdf)
- European Commission. (2026). A Global Health Resilience Initiative: Strengthening research, innovation and partnerships for health security (COM(2026) 197 final). Publications Office of the European Union. [https://international-partnerships.ec.europa.eu/document/download/c0e94b0c-e9ed-4088-9a7b-1ed94c34df48\\_en?filename=com-2026-197-1-act-part1-ghri\\_en.pdf](https://international-partnerships.ec.europa.eu/document/download/c0e94b0c-e9ed-4088-9a7b-1ed94c34df48_en?filename=com-2026-197-1-act-part1-ghri_en.pdf)
- European Parliamentary Research Service. (2024). African Union–European Union cooperation on health (PE 739.247). European Parliament. [https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/760372/EPRS\\_BRI\(2024\)760372\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2024/760372/EPRS_BRI(2024)760372_EN.pdf)
- Global Health EDCTP3 Joint Undertaking. (2024). New tools, technologies and approaches for vector control in sub-Saharan Africa (HORIZON-JU-GH-EDCTP3-2024-01-05). European Health and Digital Executive Agency. [https://cordis.europa.eu/programme/id/HORIZON\\_HORIZON-JU-GH-EDCTP3-2024-01-05-two-stage/es](https://cordis.europa.eu/programme/id/HORIZON_HORIZON-JU-GH-EDCTP3-2024-01-05-two-stage/es)
- Hertig, E. (2019). Distribution of Anopheles vectors and potential malaria transmission stability in Europe and the Mediterranean area under future climate change. *Parasites Vectors* 12, 18. <https://doi.org/10.1186/s13071-018-3278-6>
- Horizon Europe – Health NCP France. (2026, February 3). New tools, technologies and approaches for vector control in sub-Saharan Africa (Global Health EDCTP3). <https://www.horizon-europe.gouv.fr/new-tools-technologies-and-approaches-vector-control-sub-saharan-africa-36615>
- Nkengasong, J. N., & Tessema, S. K. (2020). Africa needs a new public health order to tackle infectious disease threats. *Cell*, 183(2), 296–300. <https://www.sciencedirect.com/science/article/pii/S0092867420312381>
- Pandya, L., Norstedt, I., Seychell, M., Cooke, E., de la Mata Barranco, I., Blomberg, N., Temmerman, M., & Makanga, M. (2025). Europe–Africa collaboration: Working together to strengthen health research, implementation, and equitable systems. *The Lancet Global Health*, 13(8), e1338–e1340. [https://doi.org/10.1016/S2214-109X\(25\)00201-3](https://doi.org/10.1016/S2214-109X(25)00201-3)
- Transmission Zero. (2023, March 7). First successful creation of transgenic mosquitoes by African scientists. <https://www.transmissionzero.org/post/first-successful-creation-of-transgenic-mosquitoes-by-african-scientists>
- World Health Organization. (2024, September 25). Vector-borne diseases (Fact sheet). WHO. <https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>