Challenge 4: Improving malaria control from the community to the globe

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Tackling global health challenges with deep tech

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Malaria remains a significant global health burden

- In 2022, there were an estimated **249 million malaria cases** and **608 000 malaria deaths** in 85 countries

- 76% of the deaths were in **children under 5 years** of age

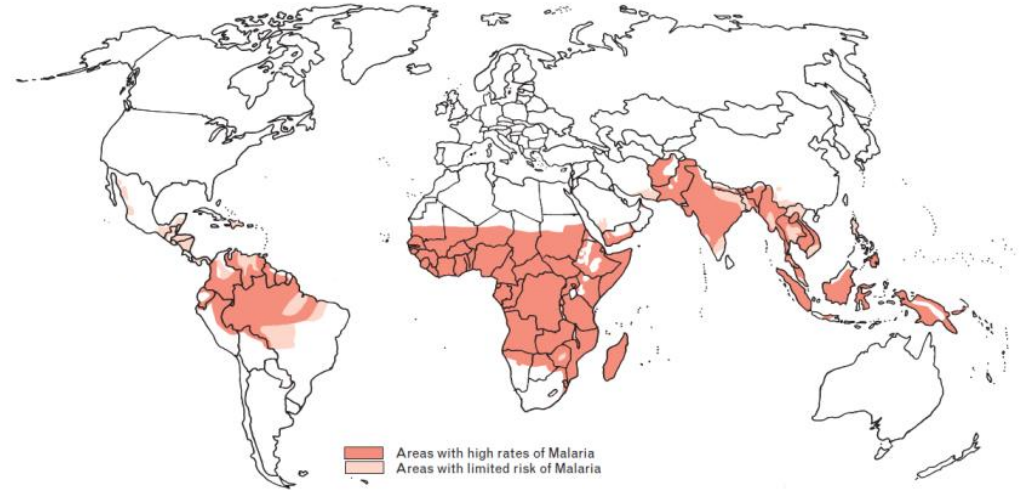- 94% of cases and 95% of deaths were in the WHO **African Region**

Areas with high rates of Malaria
Areas with limited risk of Malaria

Image source: https://www.iamat.org/risks/malaria

Malaria progress has stalled

Malaria incidence rate: progress towards global targets

100 per 1,000 people at risk

Projection of current trend

Trajectory to 2030 target

50

0

2010   2015   2020   2025   2030

Image source: Global Fund Results Report 2023 https://www.theglobalfund.org/en/results/
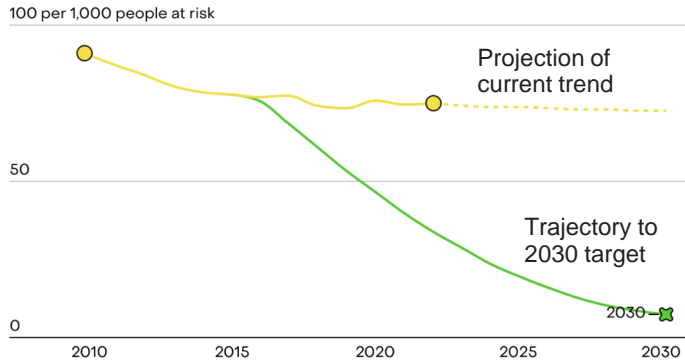
As **population is increasing** and **funding is limited**, we remain off the trajectory required to achieve the global 2030 target.

There is a **10% chance** that a child under 5 years old will **receive malaria diagnosis and treatment**.

TABLE 7.3.
Summary of coverage of treatment seeking for fever, diagnosis and use of ACTs for children aged under 5 years, from household surveys in sub-Saharan Africa, at baseline (2005–2011) and most recently (2015–2021) *Source: household surveys.*

Children aged under 5 years	Baseline (2005–2011)			Most recent surveys (2015–2021)		
Indicator	Median estimate	Lower bound	Upper bound	Median estimate	Lower bound	Upper bound
Prevalence of fever						
With fever in past 2 weeks	25.0%	19.7%	34.4%	19.9%	16.1%	26.1%
Treatment seeking for fever						
With fever in past 2 weeks for whom treatment was sought	64.8%	58.8%	72.2%	66.5%	57.2%	74.2%
Source of treatment for fever among those who were treated						
Public sector (health facility)	58.0%	48.0%	78.5%	68.8%	46.3%	83.3%
Public sector (community health worker)	2.0%	0.7%	3.4%	1.1%	0.3%	5.0%
Private sector (formal and informal)	39.8%	21.4%	51.0%	27.5%	16.7%	55.0%
Diagnosis among those with fever and for whom care was sought						
Received a finger or heel prick	29.8%	12.2%	38.4%	56.5%	37.8%	64.7%
Use of ACTs among those for whom care was sought						
Received treatment with ACTs	14.3%	7.5%	32.2%	23.9%	11.1%	43.6%
Use of ACTs among those for whom care was sought and received a finger or heel prick						
Received ACTs	20.6%	16.3%	41.7%	28.8%	18.8%	53.2%
Use of ACTs among those for whom care was sought and were treated with an antimalarial						
Received ACTs	38.9%	23.6%	68.2%	55.1%	35.5%	88.5%

Table source: World Malaria Report 2023
https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2023

Swiss TPH   University of Basel   DOK-T   Geneva Health Forum

Accelerating the reduction of malaria incidence will require:

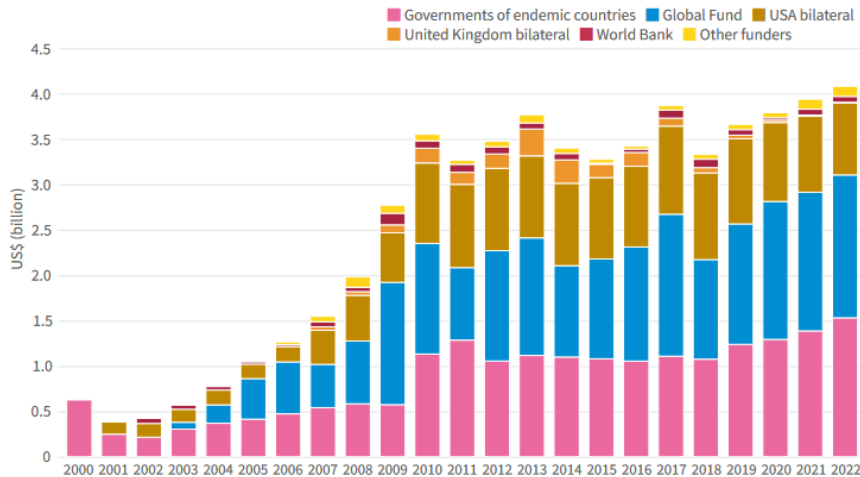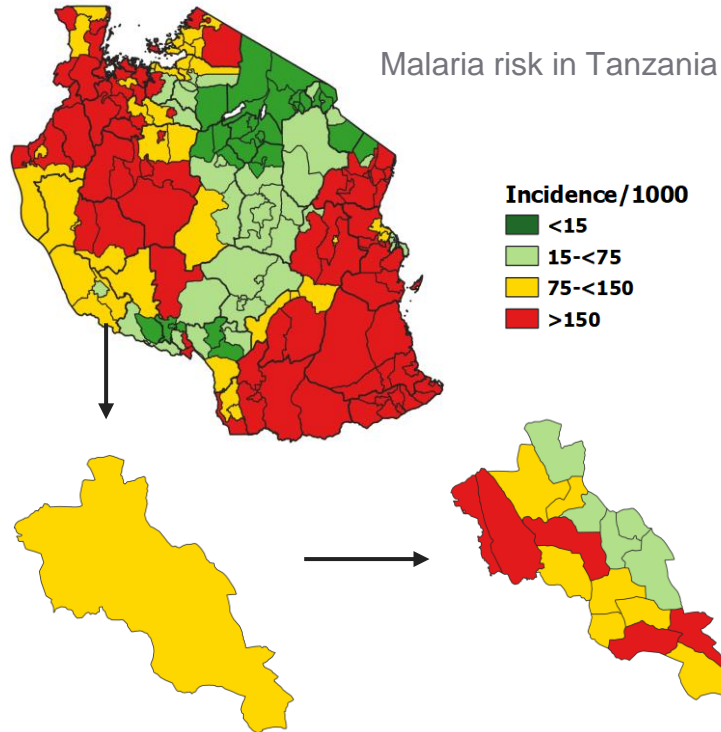➢ **Greater investment for malaria control and elimination**

Image source: World Malaria Report 2023
https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2023

➢ **More effective and efficient strategies for malaria control, especially case management**

➢ **Accurate and timely reported data to optimize and adjust control strategies**

Malaria-affected countries need targeted and strategic malaria control informed with accurate and timely data

Malaria risk in Tanzania

Incidence/1000
- <15
- 15-<75
- 75-<150
- >150

*"Countries need to be able to identify the **optimal mix of interventions** suited to their local context and the best means of delivering them to all people in need, **guided by local data**."*
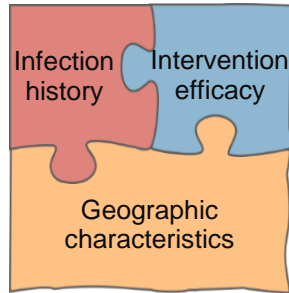
World Malaria Report 2022

- Intervention package 1
- Intervention package 2
- Intervention package 3

?

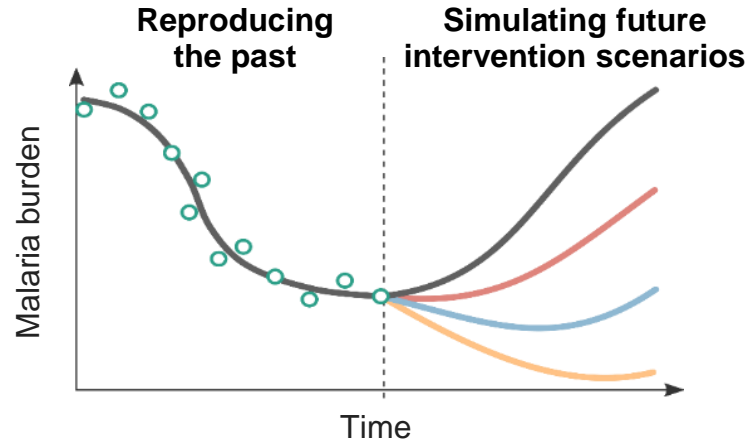NATIONAL MALARIA CONTROL PROGRAMME

Tailored malaria models can assist countries in setting their malaria control priorities

By harnessing different types of available data to build a **quantitative representation** of country-specific **malaria dynamics** and the impact of interventions, malaria models can be used to **generate evidence towards effective strategies for malaria prevention and control**.
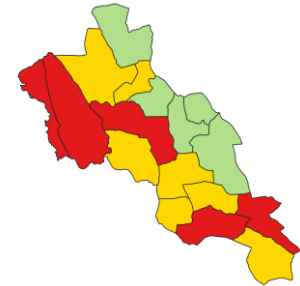
Country-specific data

Country-specific malaria model

Sub-national tailoring of interventions

Reproducing the past

Simulating future intervention scenarios

Infection history

Intervention efficacy

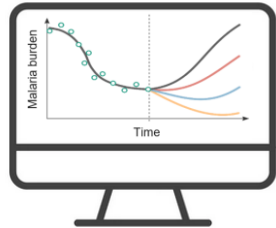Geographic characteristics

Malaria burden

Time

■ Intervention package 1
■ Intervention package 2
■ Intervention package 3

Data-driven decision-making and innovative treatment access can be game changers in malaria control

Local scale:
Early treatment access
and data collection

Global scale:
Data-informed platform to support
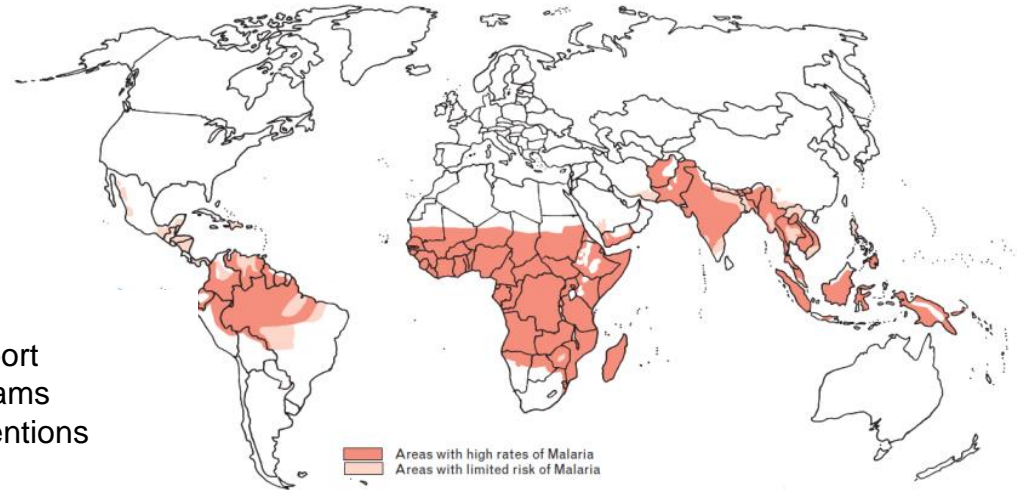National Malaria Control Programs
prioritise malaria control interventions

Areas with high rates of Malaria
Areas with limited risk of Malaria

Image source: https://www.iamat.org/risks/malaria