RAI REGIONAL STEERING COMMITTEE (RSC)

RAI3E GRANT (2021-2023)
REGIONAL ARTEMISININ-RESISTANCE INITIATIVE

with the financial support of

THE GLOBAL FUND

in partnership with:

World Health Organization

UNOPS

EXECUTIVE SUMMARY

This document aims to provide a comprehensive overview of the third Regional Artemisinin Initiative (RAI3E) grant, implemented from 2021-2023 to accelerate progress on malaria elimination in the Greater Mekong Subregion (GMS).

Cambodia, Lao PDR, Myanmar, Thailand and Vietnam have remarkable achievements to celebrate, as malaria incidence and mortality have fallen strikingly over the last decade. Though malaria has retreated in the region, the fight is not yet won. The parasite persists in areas with dense forest cover and in mobile and migrant populations, who are not as easily reached by conventional measures to combat the disease. Increasing multi-drug resistance to the main medicines used to treat malaria further complicates and threatens the important gains already made in the fight against malaria. The potential spread of drug resistance to areas with high malaria burden makes the elimination of malaria in the GMS a matter of the highest urgency to protect global health security.

These pages will explain the history of RAI grants and approaches to malaria elimination in the GMS, as well as provide an up-to-date epidemiological overview of malaria in the GMS. The current grant, RAI3E, is dissected in more detail, including geographical coverage, funding flows and programmatic priorities. The approaches in each of the five GMS countries, as well as in the regional component, are described individually. Finally, this brief will spotlight innovative approaches employed in RAI3E, investments to strengthen health and community systems, and initiatives to address human rights and gender barriers in malaria programs, as well as provide an overview of the governance of the RAI3E grant.

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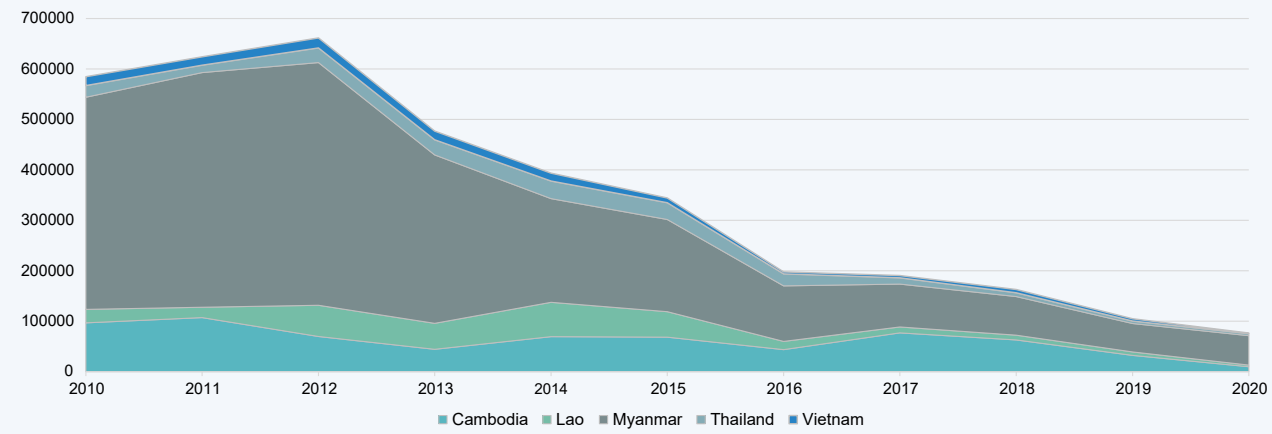
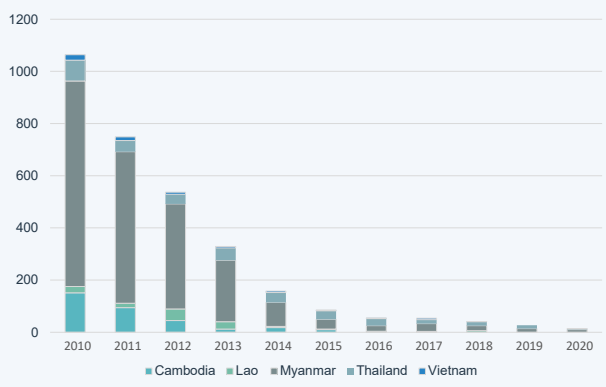
MALARIA EPIDEMIOLOGY IN THE GREATER MEKONG SUBREGION

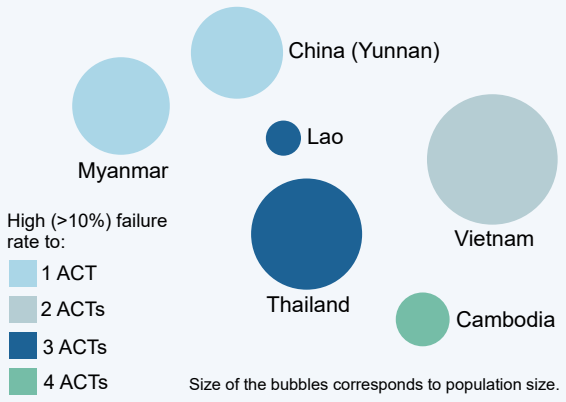
Malaria incidence in the GMS, 2010-2020



Malaria mortality in the GMS, 2010-2020



ACT failure rates, GMS, 2019



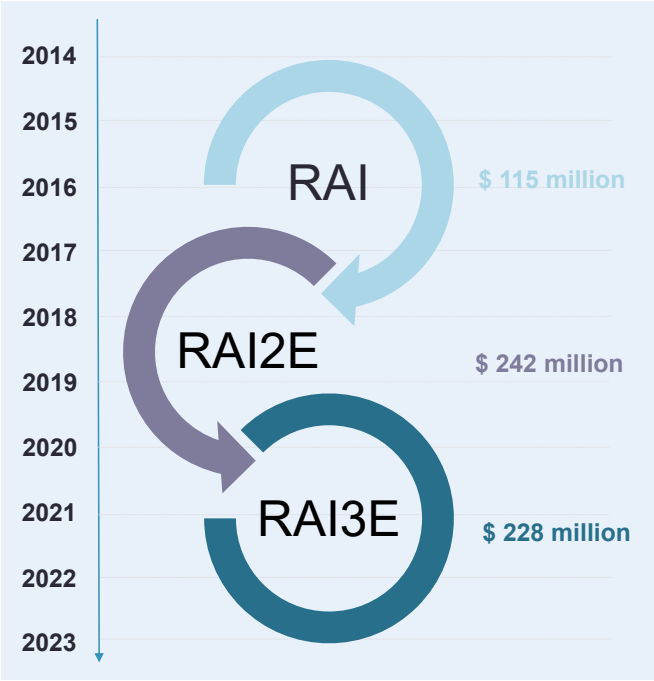
- **Remarkable progress** has been made towards malaria elimination in the GMS, with a 87% reduction in incidence and a 97% reduction in mortality from 2010 to the end of 2020.
- Plasmodium falciparum cases have dropped particularly steeply, decreasing by 47% from 2018 to 2019. This achievement is especially important in the GMS, where P falciparum resistance to artemisinin-based combination treatments is present across the region.
- ACT resistance in the GMS is a **risk to global health security**, as spread of drug resistance to higher burden countries would constitute a **global public health emergency**.
- Therefore, despite already decreasing numbers of cases and deaths in the GMS, accelerating progress towards elimination in the region is more important than ever before.
- With decreasing case counts, malaria is increasingly concentrated in hard-to-reach areas, including densely forested regions and border regions, and mobile and migrant populations are particularly affected.

APPROACHES TO MALARIA ELIMINATION IN THE GMS

- The GMS envisions and aims for elimination of **all species of malaria by 2030** and elimination of P falciparum malaria by 2023.
- All GMS countries have **national malaria elimination plans,** united by the Strategy for Elimination in the GMS (2015-2030).
- The risk of artemisinin-resistant malaria spreading from the GMS to high-burden regions is a major global health security threat.
- Moving towards elimination is the best strategy to reduce the emergence and spread of drug-resistant malaria.
- The RAI3E grant supports a wide **network of community health** workers providing malaria services to their communities; key to achieving elimination in the GMS.
- The development of a **granular surveillance system** underpins progress on elimination by enabling stratification and precise targeting of interventions.
- A country's position on a **continuum of transmission intensity** should inform its programmatic strategy towards malaria elimination.
- In high-transmission areas, vector control and universal access to diagnosis and treatment are needed to reduce malaria incidence.
- For the last mile towards elimination, aggressive approaches such as targeted drug administration and active screening can be employed.
- Alongside biomedical interventions, malaria elimination requires sustained **political commitment,** sufficient **financial resources** and effective **partnerships.**
- The WHO Mekong Malaria Elimination (MME) programme, launched in 2017, provides technical support, facilitates coordination and dialogue among partners, and coordinates cross-border initiatives.

APPROACHES TO MALARIA ELIMINATION IN THE GMS

HISTORY OF RAI GRANTS



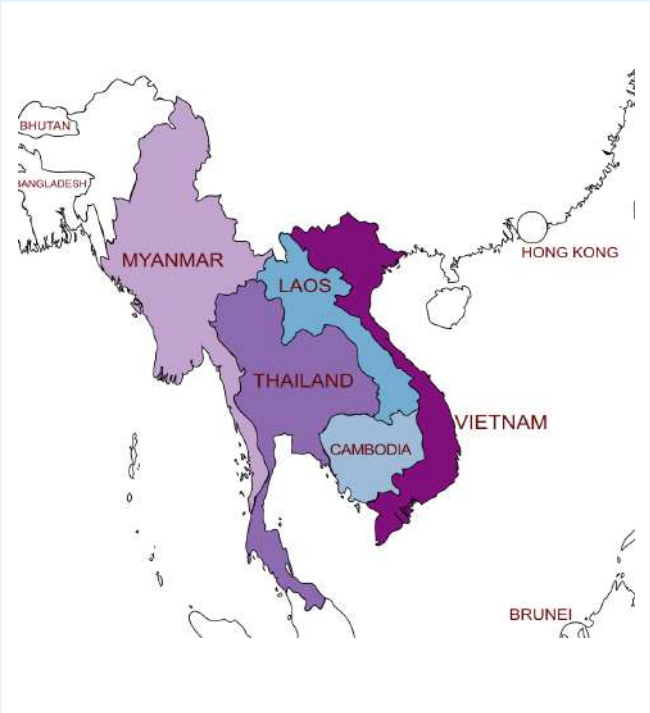
- The Regional Artemisinin-Resistance Initiative (RAI) was **launched in 2013** in response to the emergence of artemisinin-resistant malaria in the GMS.
- RAI is funded by The Global Fund to Fight AIDS, Tuberculosis and Malaria.
- RAI is the Global Fund's **largest regional grant** and the first with the **defined goal of disease elimination.**
- The first RAI grant (2014-2017) operationalized **US$ 115 million** of malaria programming in five countries of the GMS: Cambodia, Lao, Myanmar, Thailand and Vietnam.
- The second RAI grant (RAI2E) covered the time period of 2018-2020 and disbursed **US$ 242 million** to continue the successes achieved under the first RAI grant.
- The third RAI grant (RAI3E) covers the time period of 2021-2023 and disbursed **US$ 228 million.**
- RAI grant funding has been used to **purchase key malaria commodities,** including vector control, diagnostics and quality-assured drugs, **develop surveillance systems**, support case management by community health workers, and **build resilient and sustainable health and community systems**.

OVERVIEW OF RAI3E

The RAI3E grant spans the years 2021 to 2023 and has a value of **US$ 228 million.** RAI3E is a continuation and extension of the existing RAI programme, with the overarching vision and aim to **eliminate malaria transmission in the GMS** and **prevent the spread of drug-resistant malaria**. RAI3E funding is split across five country components and one regional package, which funds cross-border initiatives to address enduring barriers to eliminating malaria in the region.

RAI3E Breakdown by Component

Myanmar US$ **99.2** million	Cambodia US$ **36.2** million	Regional US$ **28.4** million	
	Vietnam US$ **29.7** million	Thailand US$ **21.1** million	Lao PDR US$ **14.3** million



Actors & Stakeholders

- UNOPS is the Principal Recipient (PR) of the RAI3E grant.
- The RAI3E has 39 Sub-Recipients (SRs): 9 national government bodies, 2 international organisations, 5 research institutes, 22 civil society organizations and one private sector entity.
- The PR and SRs implement the grant, with the Global Fund and the Regional Steering Committee (RSC) monitoring implementation on an ongoing basis.
- CSOs are critical change agents in RAI3E, being able to reach and work in partnership with underserved, remote and vulnerable populations.
- The Global Fund works with Local Fund Agents (LFAs) and in-country partners to assess programmatic activities and audit grant finances.

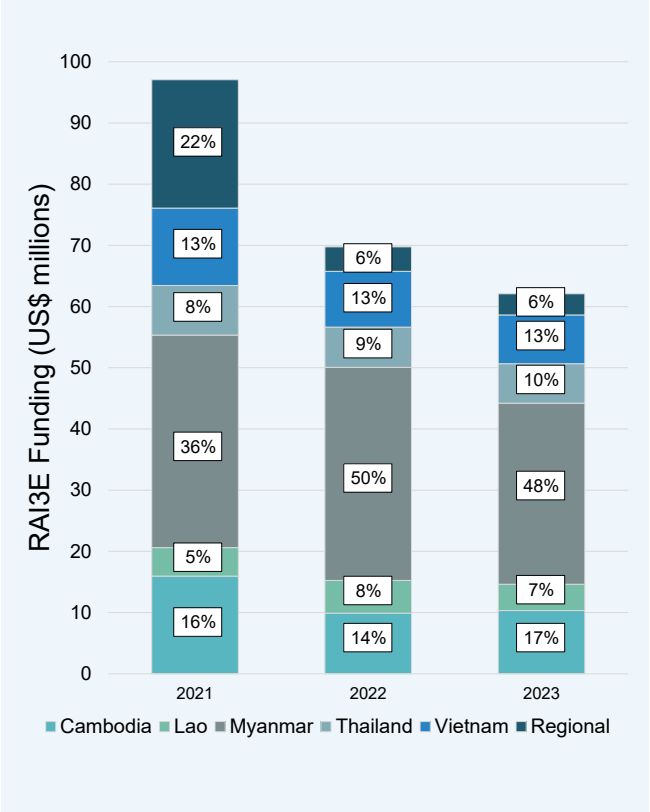
OVERVIEW OF RAI3E

Target Population

- RAI3E employs several strategies to address the needs of remote, mobile and minority populations.
- Community members, and the local organisations that serve them, can raise issues to the RSC and ensure the unique needs of these populations are being met.
- Village and mobile malaria workers are members of the communities they serve, and are trained to deliver basic prevention, diagnosis and treatment services.
- RAI partners are recruiting and supporting approximately 39,000 malaria volunteers across the five GMS RAI3E countries.

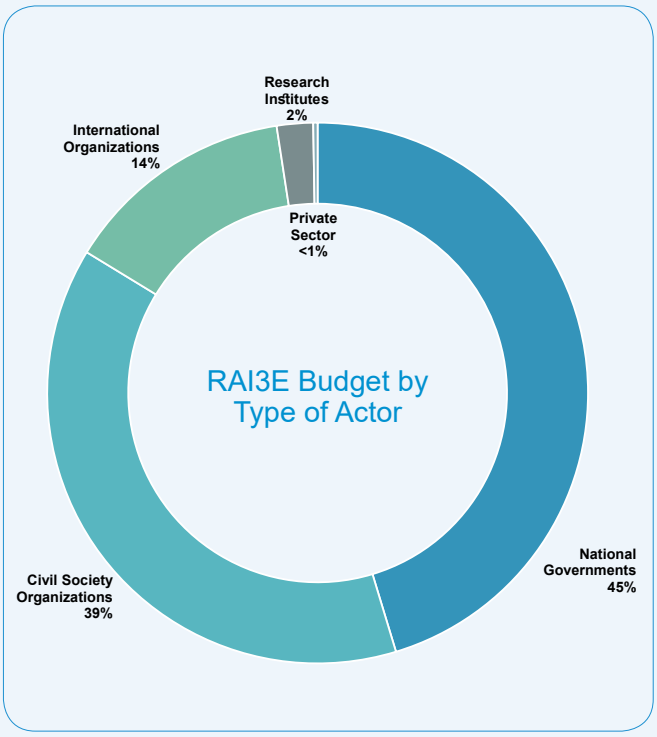
DEEPER DIVE ON RAI3E FUNDING

RAI3E Budget by Component



- RAI3E provides US$ 97 million of funding in 2021, US$ 70 million in 2022 and US$ 62 million in 2023.
- Myanmar receives the largest share of RAI3E funding, in line with the larger malaria burden compared to the other countries.
- Regional RAI3E funding is specifically aimed at reducing malaria transmission in **key border areas** where **tailored approaches** are needed to meet the needs of mobile and migrant populations and to **enhance cross-country collaboration.**
- RAI3E funds **interventions across the spectrum of malaria control,** ranging from preventive tools like vector control to increased availability of testing and treatment services.
- RAI3E also invests in **building resilient and sustainable health systems and community systems,** as well as fostering enhanced **collaboration and coordination** between partners in the region.

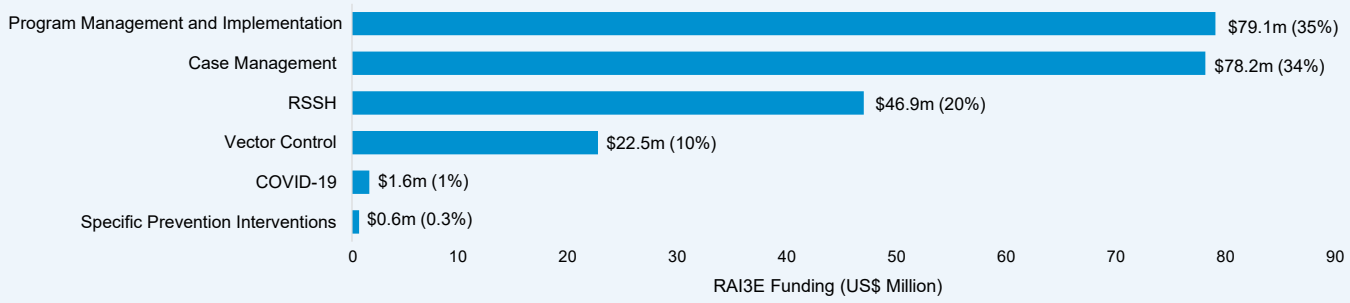
- The RAI3E portfolio is spread across a range of different interventions and implementing partners.
- This **diversification** is instrumental in ensuring that RAI3E programming reaches the entire target population, including populations that are on the move, live in remote areas, or are otherwise hard to reach.
- Through the regional component, RAI3E also funds research institutes to conduct **operational research** projects, selected through a rigorous multi-stakeholder process.
- Since elimination timelines are drawing closer, the focus of RAI3E operational research is on 'learning by doing': rapidly identifying novel and improved approaches to malaria control that can be immediately operationalized.



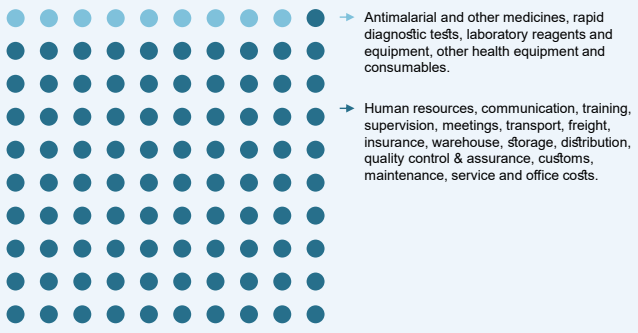
DEEPER DIVE ON RAI3E FUNDING

The majority of the RAI3E budget is earmarked for the costs of **program management** and implementation and **case management.** Vector control and investments to **build resilient and sustainable systems for health** are also important cost contributors. **Commodification** of grant spending is not the same across modules; while the majority of the vector control budget is spent on vector control commodities, the majority of funds for case management are invested into human resources, training, supervision and other non-consumable activities.

RAI3E Funding by Module



Grant Commodification: Case Management



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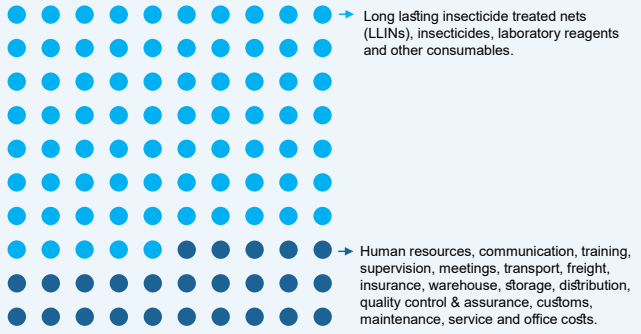


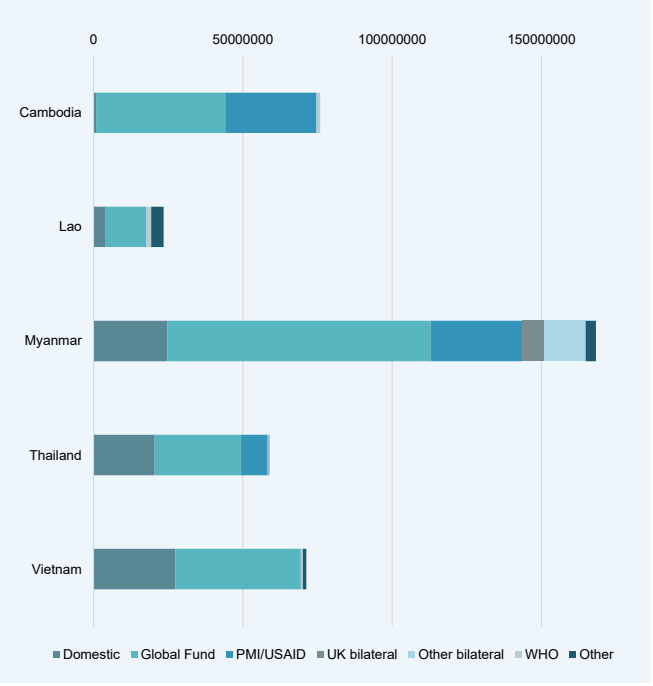
Sustainability, Transition and Co-Financing

- **External donor financing will gradually decrease** over the coming years, and in the near future, GMS countries will be wholly financially responsible for their malaria programmes.
- Careful planning for this **transition process** will ensure that gains already achieved will be sustained and built on.
- Preparing for transition should be **multisectoral**, including both the broader health sector and finance and business, and **multi-stakeholder**, involving and championing the perspectives of civil society organizations and community health workers.

DEEPER DIVE ON RAI3E FUNDING

- **Domestic financing** is key to a successful and sustainable transition from donor-funded programmes. GMS countries already co-finance RAI-funded programmes, and their domestic contributions are expected to increase in a step-wise fashion as external financing abates.
- Strategies to achieve **sustainability** of malaria successes include the **integration** of malaria programmes into universal health coverage systems, the **merging and rationalizing** of health information systems, galvanizing **political will** for increased domestic financing through advocacy, and **leveraging funds** from the private sector through corporate social responsibility initiatives or ESG investments.
- Ultimately, **achieving elimination** in the region is the simplest and most effective way to ensure sustainability.

Funding for Malaria Programmes, 2017-2019 (US$)



CAMBODIA NATIONAL COMPONENT

RAI3E is investing **US$ 36.2 million** into malaria programmes in Cambodia, aiming to move closer to elimination through a multi-pronged approach of case management, vector control and health system strengthening interventions.

Epidemiology

2020 figures unless stated otherwise.
Change from 2015 in brackets.

Cases: 9490 (↘ 68109)

Deaths: 0 (↘ 10)

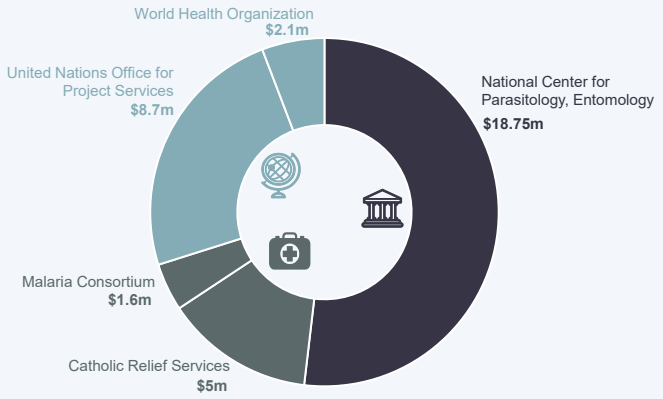
% Pf/mixed: 11% (↘ 32%)

API: 0.59 (↘ 3.5)

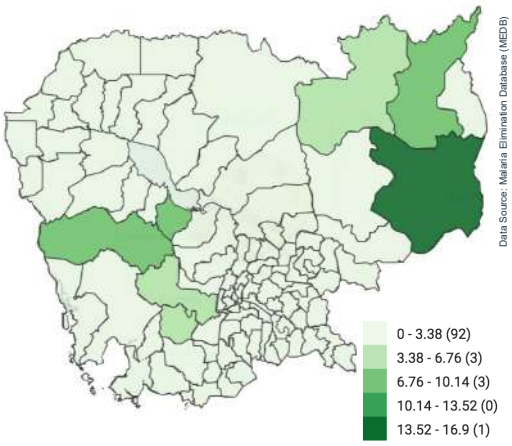
ABER: 5.3 (↗ 1.5)

- When RAI3E commenced, malaria was endemic in 21/24 provinces, but particularly concentrated in 7 provinces.
- The vast majority of cases are among MMPs living or working in forested areas.
- The country has achieved a significant decline in malaria burden. Malaria elimination will require focused programming for hard-to-reach and mobile populations.

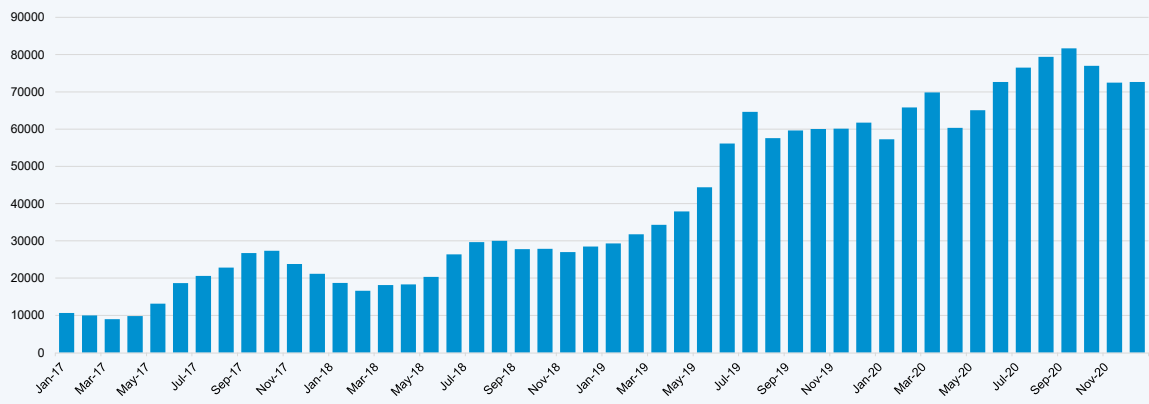
Actors



API by Operational District (OD), 2020



Suspected Cases Tested, January 2017 – December 2020



CAMBODIA NATIONAL COMPONENT

Funding Priorities & Programming

Case Management

- Community malaria workers receive **training and support** to conduct **passive case management services and IEC/BCC interventions** in their home communities.
- As malaria cases decrease, village malaria workers are being **integrated into broader community** health platforms and are providing a larger range of health protection & promotion services. The decommissioning of VMW/MMWs into the network of village health strategic groups (VHSGs) is beginning where malaria incidence is lowest (strata 1 and 2).
- **Private sector practices are monitored** to ensure correct referral of suspected malaria cases to public facilities.
- **Radical cure treatment,** with quantitative G6PD testing, adherence support and pharmacovigilance, is used to move towards elimination of Pv malaria.
- **Therapeutic efficacy surveillance** is planned for all Pf cases, but there is currently only sufficient capacity for 50% of Pf cases.

Vector Control and Personal Protection

- **Mass** distribution of LLINs is targeted to the **highest risk areas** (villages in risk strata 3,4 and 5).
- Routine LLIN distribution is conducted to account for attrition and to target **high-risk populations.**
- LLIHNs have been introduced to address forest transmission in strata 4 and 5.
- Forest-goers are also provided with **forest packs**, containing LLIHNs, topical repellents and health education materials.
- **Entomological investigation** is carried out in outbreak areas and in persistent transmission foci.

Health Management Information Systems

- **The electronic data system (MIS)** is a powerful real-time reporting tool to guide risk stratification and the deployment and scale-up of elimination interventions.
- The **use of smartphones and tablets** at the community level enables real-time geo-tagged sharing of epidemiological data and stock status.
- To help prevent stock-outs, **automated forecasting** of key commodities will be built into MIS. This update will be complemented by **improved capacity** for procurement and storage, and **optimization of distribution** to remote areas within the broader supply chain (not creating a parallel supply management system for malaria).

High-Burden Areas

- Community malaria workers conduct frequent visits to forest areas to conduct **active case detection**, treat and track positive cases, and provide health education.
- In persistent foci, **mass and focal drug administration** (3 days ACT) is implemented to interrupt transmission in high-risk groups.
- In high-burden border areas, malaria posts are deployed to reach mobile populations.

CAMBODIA NATIONAL COMPONENT

Elimination Approaches

- The aim is for all confirmed cases to be notified, investigated and classified within **24 hours**, responded to within 3 days and new active foci to be investigated and classified within 7 days.
- **Focus investigation** will be conducted for all Pf cases. Foci are classified based on receptivity and vulnerability.
- **Foci management**, based on foci classification, includes **aggressive approaches** to strategically move towards elimination, including **synergistic combinations** of targeted drug administration, door-to-door fever screening, intermittent preventive treatment, vector control and community mobilization.
- Case-based surveillance, diagnostic services and community sensitisation will be **maintained after elimination** to detect reintroduction and prevent re-establishment.

Governance and Coordination

- Outbreak preparedness is achieved through **close coordination** among partners, guidelines, SOPs, training and keeping buffers of key commodities.
- Monthly review meetings are held with partners and donors to review program progress and improve collaboration.
- Despite a complex partnership landscape, coordination between partners is generally good, with clear mapping of implementation arrangements. Even stronger coordination will however be required for successful malaria elimination.

LAO PDR NATIONAL COMPONENT

Lao's malaria programme receives **US$ 14.3 million** of RAI3E funding, which supports community case management, surveillance, vector control and health system strengthening investments.

Epidemiology

2020 figures unless stated otherwise.
Change from 2015 in brackets.

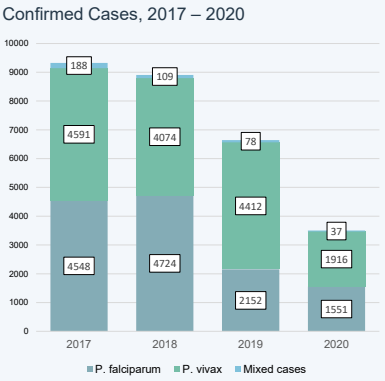
Cases: 3505 (↘ 50724)

Deaths: 0 (↘ 2)

% Pf/mixed: 45% (↗ 30%)

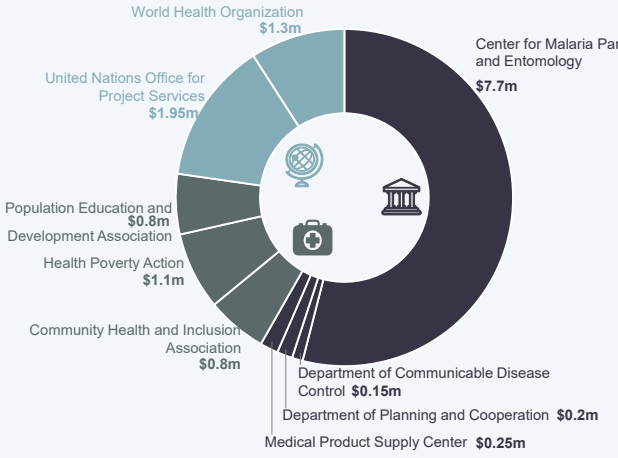
API: 0.49 (↘ 5.4)

ABER: 8.1 (↗ 4.3)

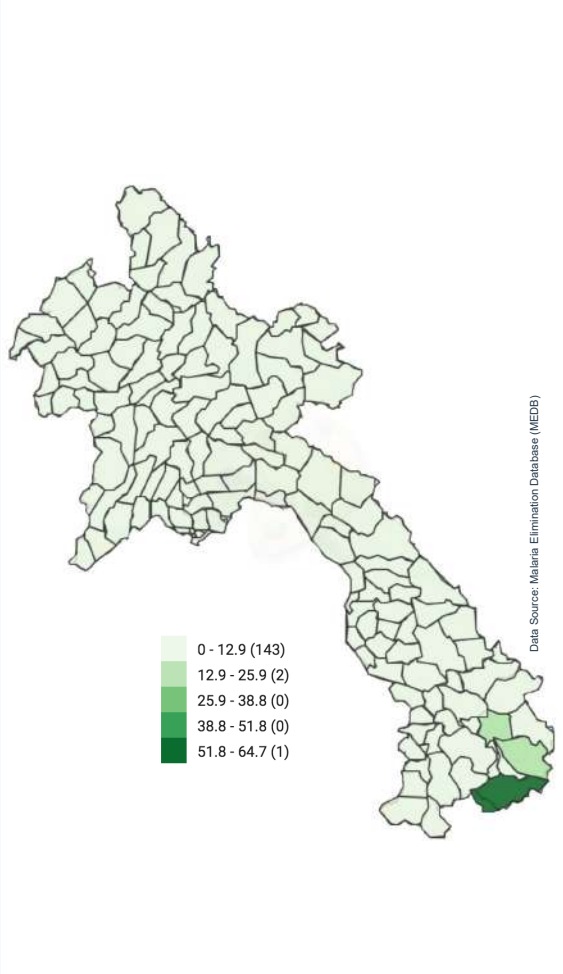


- At the time of writing, malaria cases were concentrated in five southern provinces, where transmission is facilitated in hilly and densely forested areas.
- The majority of malaria cases are amongst forest goers and farmers, however, some villages have persistent parasite reservoirs and contribute to ongoing transmission.
- As case numbers decline, Lao's malaria strategy is shifting towards strengthening, expanding and integrating malaria elimination activities.

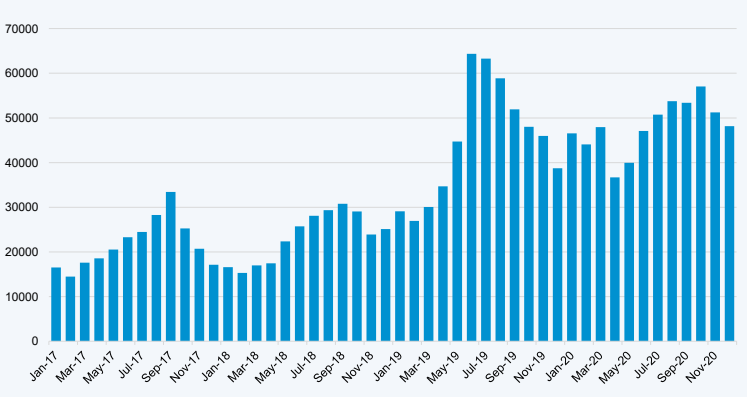
Actors



API by District, 2020



Suspected Cases Tested, January 2017 – December 2020



LAO PDR NATIONAL COMPONENT

Funding Priorities & Programming

Case Management

- Health workers at all levels (public, private, community and military) are **trained and supported** to provide **diagnostic and** treatment services, as well as conduct community engagement and education activities.
- Village-based **forest-going** populations are targeted for more regular testing and health education interventions. The enhanced response strategy also includes forest packs, tailored IEC materials and mobile outreach visits.
- **Radical treatment** for Pv is a high priority in the current strategic plan. VMWs assist referral to G6PD testing to enable access to radical cure. Radical cure is supported by pharmacovigilance systems and patient compliance monitoring.
- **Active case detection** will be undertaken as a core activity during outbreak response.
- **Private sector** providers are **trained** on diagnosis, treatment and elimination activities, and **monitored** for the use of counterfeit ACT or artemisinin monotherapy.
- Lao PDR will focus on **expediting the approval process** for many different ACT regimens, as well as strengthening **pharmacovigilance** systems and conducting **quality control**, to ensure availability of quality and efficacious treatment.

Vector Control

- **Mass distribution** of LLINs for all at-risk populations in strata 3 and 4 villages will be conducted in 2022, in combination with **health education communication** and **LLIN coverage assessments.**
- A **central emergency stockpile** of LLINs is maintained for active foci and outbreak response.
- **Annual continuous distribution** of LLINs/ LLIHNs is carried out to ensure universal coverage of high-risk populations.
- IRS is only carried out in outbreak settings, or in active foci in elimination areas (if LLINs are unavailable).
- **Entomological monitoring** is conducted on a routine basis as well as part of foci and outbreak investigations.

Surveillance

- Malaria surveillance is **integrated** into the national health information system DHIS2.
- In addition to routine malaria data, the malaria module within DHIS2 has been expanded to include PPM, active case detection and elimination data, as well as information on iDES and the deployment of vector control tools.
- Integration of entomological surveillance data, TES results and drug resistance molecular markers is planned.
- The **granularity** of the surveillance system will be improved so that hotspot villages can be more rapidly identified.

LAO PDR NATIONAL COMPONENT

- The **use of new technologies**, including mobile data collection and SMS reporting, enables real-time reporting, accurate micro-stratification, optimized intervention implementation, and rapid outbreak response.

Elimination Approaches

- The **Public Health Emergency Operations Center (PHEOC)** is being strengthened to transform malaria surveillance into a core intervention and improve accountability for progress on malaria elimination. The PHEOC's incident management system is being improved to allow for rapid foci and outbreak response.
- Regular stratification and finer-scale mapping enables improved intervention planning and implementation.
- The **1-3-7 strategy** will be revised to shift community case investigation and classification from district and provincial levels to the point of care, making the approach more pragmatic, dynamic and financially efficient.
- **Aggressive strategies** used to accelerate Pf elimination include TDA, IPTf and active house-to-house fever screening.

Health and Procurement System Strengthening

- The NMCP is working to include malaria surveillance and response in the MOH strategy to **integrate disparate structures in the health system**, including human resources, finances, service delivery, information systems and supply chains.
- Specifically, the village malaria worker responsibilities will be integrated into broader multi-tasked village health worker roles, working under the auspices of a national primary health care system.
- **Stock levels** are regularly monitored at health facility, district and provincial levels, and recorded in DHIS2, to improve the efficiency of the supply chain and avoid stock-outs.

Governance and Coordination

- DCDC, CSOs and CMPE plan to share training, supplies and funding to **better integrate and coordinate** approaches.
- CMPE **advocates** to high-level MOH and government to improve political commitment and resource mobilization.
- The malaria programme is **reviewed regularly**, including through supervision visits, stakeholder interviews and meetings.
- Provincial coordination will be strengthened in burden reduction areas. Central coordination is relatively strong, with clear delineation of roles and responsibilities.
- Monthly coordination meetings are held with CMPE, PR and SRs to track progress and discuss solutions to bottlenecks.

MYANMAR NATIONAL COMPONENT

RAI3E is investing **US$ 99 million** to fight malaria in Myanmar, investing in case management, vector control and health systems. **Due to the developing political situation in Myanmar, information available at the time of writing may no longer be an accurate representation of malaria programs operating in the country.**

Epidemiology

2020 figures unless stated otherwise.
Change from 2015 in brackets.

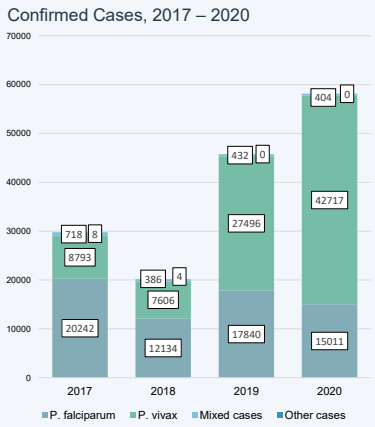
Cases: 58132 (↘ 182616)

Deaths: 10 (↘ 37)

% Pf/mixed: 27% (↘ 64%)

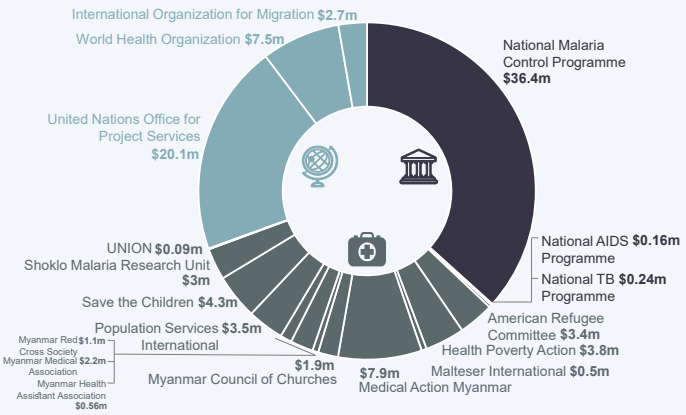
API: 1.1 (↘ 3.6)

ABER: 7.1 (↗ 5.3)

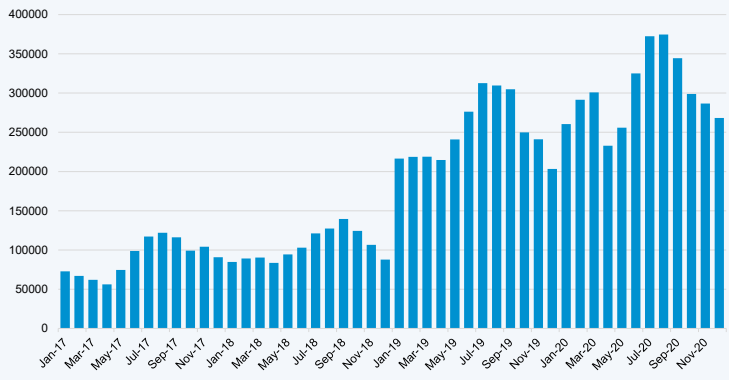


- Myanmar has the largest share of malaria cases and deaths in the region.
- Malaria transmission is high in remote and hard-to-reach forested areas.
- With declining cases, malaria is becoming increasingly focal.
- Ongoing conflict and significant humanitarian challenges restrict access to health services (including malaria), particularly for ethnic minorities and marginalized populations.

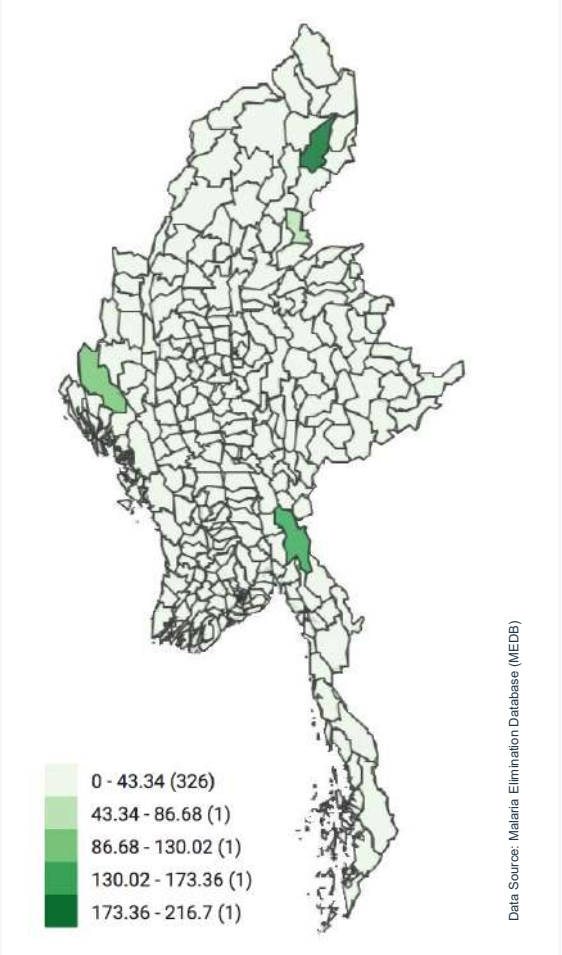
Actors



Suspected Cases Tested, January 2017 – December 2020



API by Township, 2020



MYANMAR NATIONAL COMPONENT

Due to the developing political situation in Myanmar, information available at the time of writing may no longer be an accurate representation of malaria programs operating in the country.

Funding Priorities & Programming

Case Management

- The majority of cases are tested and treated in the community by **Integrated Community Malaria Workers** (ICMVs).
- ICMVs receive training and **supervision** to deal with a multitude of infectious diseases, minor injuries and ailments, integrating them into broader community health platforms as part of universal health coverage (UHC) reforms.
- **Active case detection** and treatment is conducted in burden reduction areas.
- Reactive (RACD) and proactive (PACD) case detection are also conducted as **mobile outreach** services, engaging with forest-goers to test co-travelers and family members.
- An advocacy fact sheet on malaria elimination will be developed. **IEC/BCC** materials will be produced in local languages and be made accessible for those with sensory impairments and disabilities.
- Two reviews of whether the program is removing **human rights and gender-related barriers** to case management are funded, the first in 2021 to recommend necessary actions and the second in 2023 to measure progress.

Vector Control

- **Mass distribution** of LLINs to the entire population living in strata 3 townships will be conducted in 2022. Mass campaigns of LLINs will also be conducted as part of foci and outbreak responses.
- LLINs are **continuously distributed** to **key populations** such as pregnant women and forest goers.
- LLIHNs are being trialed with forest-goers as a pilot approach.
- **IRS** is used in outbreak response, and in active foci in elimination settings.
- Routine entomological monitoring is replaced with **epidemiology-led entomological surveillance** to investigate outbreaks and persistent transmission foci and develop appropriate solutions.

Surveillance

- Myanmar is moving to a **case-based web-based surveillance system** that is integrated with other disease reporting within DHIS2.
- The new web-based reporting tool will also require data to be disaggregated by gender, with the aim that all partners reporting **gender-disaggregated data** will enable a better understanding of gender-related barriers.
- ICMVs are provided with **mobile phones** and/or tablets to enable near real-time case-based reporting.
- **Migrant mapping** exercises are conducted to better understand the location, mobility and needs of migrant populations.

MYANMAR NATIONAL COMPONENT

Health Management Information Systems

- The issue of **stock-outs** at both public and private health facilities and the community level needs to be addressed through improved forecasting, procurement, supply chain management, training and supervision.
- The **electronic health product management system** 'mSupply' is being expanded to the township level, which requires technical support and staff training.
- **Storage warehouses** will be renovated to improve storage and distribution capacity.
- Commodity distribution arrangements for different disease programs will be integrated to increase the efficiency of supply chains.

Elimination Approaches

- In low-transmission townships, rapid and complete case and focus investigations are critical to interrupt transmission.
- Myanmar pursues a **1-7 elimination strategy** due to the remote geography of many elimination areas, whereby case notification, investigation and classification are done at the point of care within one day, and focus investigation, classification and response are merged into a single package of interventions to be conducted within 7 days.
- **Forest goer packs**, including a LLIN/LLIHN, IEC/BCC materials and standby treatment, are provided to those working and/or sleeping in forests.

Governance and Coordination

- Implementing partners attend **regular review and planning meetings** to assess the impact of ongoing programs and plan for the next implementation period in an integrated way.
- CSOs collaborate with and build the capacity of Ethnic Health Organizations (EHOs) and Ethnic Community-Based Organizations (ECBOs) to deliver quality prevention and control services to **vulnerable ethnic minority populations**.

THAILAND NATIONAL COMPONENT

Thailand is investing **US$ 21** million into its malaria elimination program, which incorporates core and aggressive interventions deployed in a strategic manner to accelerate the decline in malaria incidence.

Epidemiology

2020 figures unless stated otherwise.
Change from 2015 in brackets.

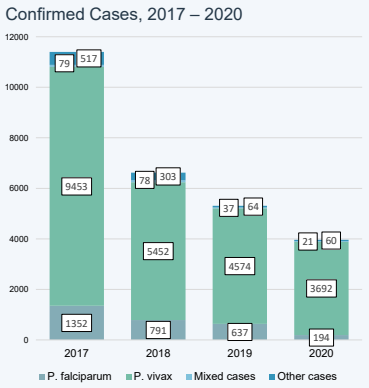
Cases: 4004 (↘ 33430)

Deaths: 3 (↘ 33)

% Pf/mixed: 5% (↘ 15%)

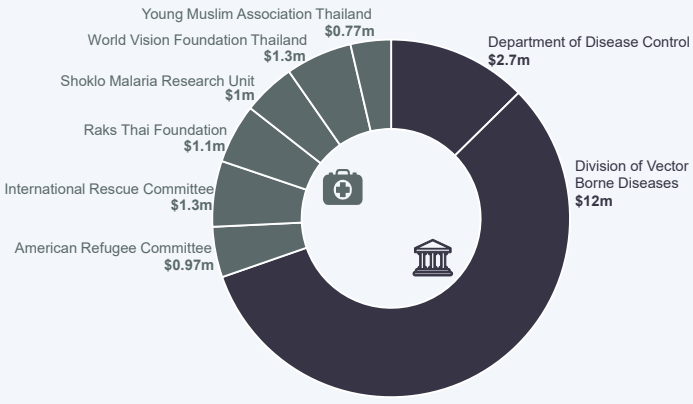
API: 0.06 (↘ 0.34)

ABER: 1.2 (↘ 2.3)

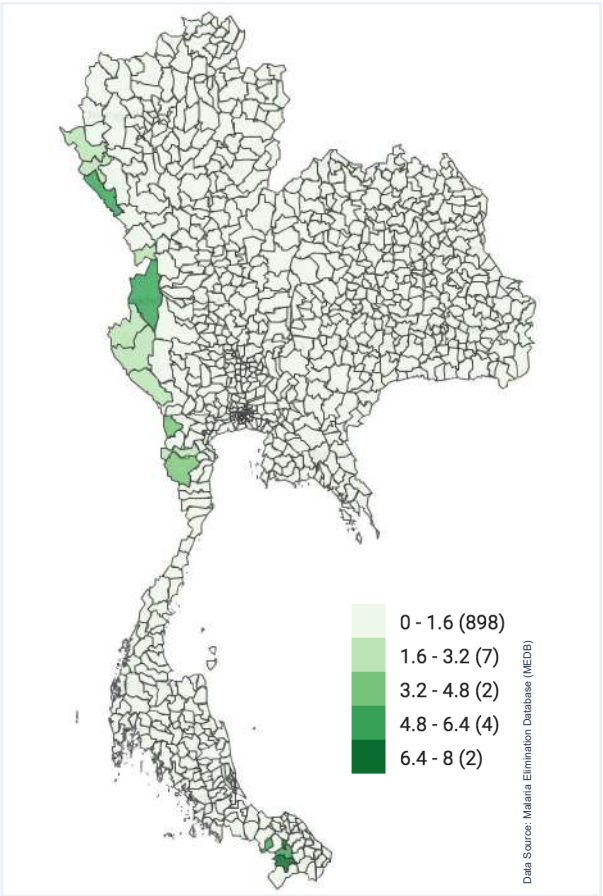


- With declining incidence, malaria is increasingly focal. Cases and active foci are concentrated in forested, mountain terrain and border areas.
- At the time of writing, five high burden provinces accounted for over two thirds of cases.
- Public health services and local CSOs coordinate to deliver key interventions to at-risk populations, which include migrants, refugees and forest-goers.
- There are hotspots of highly drug-resistant Pf, with treatment failure against up to three different ACTs.

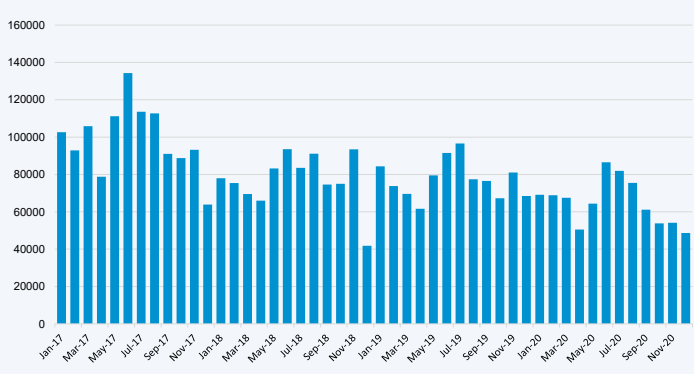
Actors



API by District, 2020



Suspected Cases Tested, January 2017 – December 2020



THAILAND NATIONAL COMPONENT

Funding Priorities & Programming

Case Management

- Malaria services, including **testing, treating and referral**, are delivered in the **community** through village-based Malaria Posts (MPs), MP workers (MPWs) and Village Health Volunteers (VHVs).
- Service delivery is increasingly shifted from the vertical malaria program towards i**ntegrated people-centered** health services and more decentralized management of malaria control and elimination efforts.
- MPWs perform **proactive case detection** to increase service coverage for migrants, refugees and forest-goers.
- Case management is also performed at **public and private hospitals**, where staff are trained on the national treatment guidelines, hospital-based surveillance, case notification and the 1-3-7 approach.
- To support appropriate targeting of interventions, **mapping** of risk groups, forest worksites and forest-based settlements will be carried out by health staff, MPWs and CSOs using a purpose-designed **mobile application**.
- MPW/VHVs use tailored **social and behavioural change communication** (SBCC) in community engagement on risk awareness, health seeking behaviour, personal protection, early diagnosis and treatment adherence.
- **Radical cure treatment** is supervised in the community to maximise adherence and samples taken at follow-up are examined to monitor treatment efficacy as part of **routine iDES**.

Vector Control

- **LLINs** are continuously distributed in focal areas, together with strategic SBCC to promote the use of LLINs.
- **LLIHNs** are procured and distributed to those exposed to outdoor transmission.
- **IRS** is conducted in villages and worksites in at-risk areas. Focal spray is conducted as part of RACD.
- To increase vector control coverage, the program will seek **stronger collaboration** with the formal sector (military, forest rangers, border guards, wildlife protection) and use **volunteers** from informal groups (hunters, foragers, rubber tappers).
- Routine entomological monitoring in sentinel sites is replaced with **epidemiology-led entomological surveillance** for investigation of outbreaks and persistent active foci and development of locally appropriate mitigation measures.

Surveillance

- **Near real-time case-based reporting and monitoring** will be improved at the focus and household level through the adoption of a mobile application for surveillance, which will be integrated into the **'malaria online'** system.
- Cases identified at district and sub-district level hospitals and health facilities are captured through the **national disease surveillance system**, which is linked to 'malaria online'.
- Strengthened malaria case-based surveillance enables **annual microstratification** based on foci classification.

THAILAND NATIONAL COMPONENT

- **Outbreak alert thresholds** are updated with declining incidence for timely notification to local authorities and communities.

Health System Strengthening

- RAI3E strengthens the **national reference laboratory** and funds capacity building on microscopy and G6PD diagnostics.
- **Stock-outs** of malaria commodities at public, private and community facilities are planned to be addressed through improved forecasting, procurement, supply chain management, training and supervision.
- To improve health product management, an **electronic logistics management system** (eLMIS) is being developed.

Elimination Approaches

- The **1-3-7 approach**, involving case notification by **day 1**, case investigation by **day 3** and focus response by **day 7,** is used to accelerate progress towards malaria elimination.
- **Reactive case detection** (RACD) is conducted in response to case notification for additional case finding.
- In hard-to-reach areas or among high-risk populations, RACD is implemented flexibly to maximise coverage, such as through engaging with co-travelers or conducting activity in the evening or at night to capture specific risk groups.
- Foci investigation in Pf foci is complemented by **mass screening and testing** (MSAT) through malaria mobile clinics.

Governance and Coordination

- **Advocacy and capacity building** aim to promote sub-national management and investment in malaria elimination and to strengthen local capacity to reach elimination and prevent re-establishment.
- Regular **coordination** meetings are held between government representatives and CSOs to align objectives, develop annual work plans and coordinate activities to ensure optimal coverage of interventions.
- Guidelines for outbreak and epidemic preparedness, detection and response are revised to reflect increased **decentralization and integration** of authorities and responsibilities.
- In border areas, **cross-border coordination and data sharing** is strengthened through the twin city/village approach.

VIETNAM NATIONAL COMPONENT

Vietnam uses RAI3E funding (**US$ 29.7m**) to accelerate progress on malaria elimination, using tailored approaches to address the specific needs of high-risk populations and precise targeting of interventions to hotspots.

Epidemiology

2020 figures unless stated otherwise.
Change from 2015 in brackets.

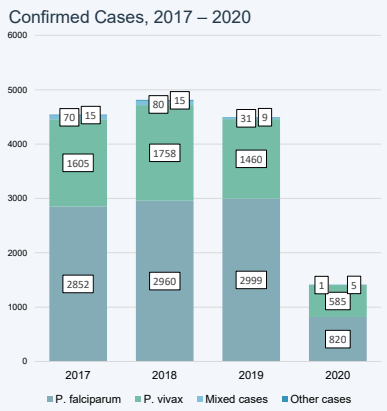
Cases: 1421 (↘ 9331)

Deaths: 1 (↘ 3)

% Pf/mixed: 58% (↗ 49%)

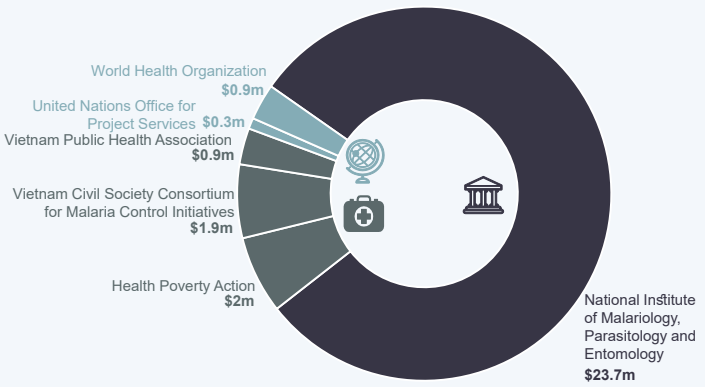
API: 0.01 (↘ 0.1)

ABER: 1.9 (↘ 3.0)

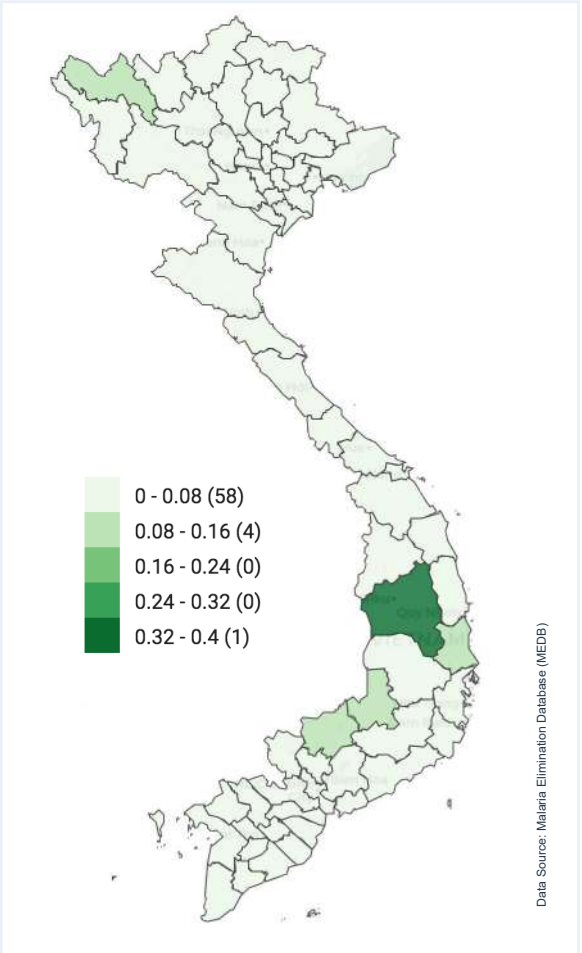


- At the start of RAI3E, malaria was concentrated in hilly, forested areas in the southern and central provinces.
- Malaria most commonly affects hard-to-reach populations, including forest-goers, migrants, seasonal workers and ethnic minority groups.
- Vietnam has made significant gains in malaria control in recent years and is well positioned to reach its elimination goals.

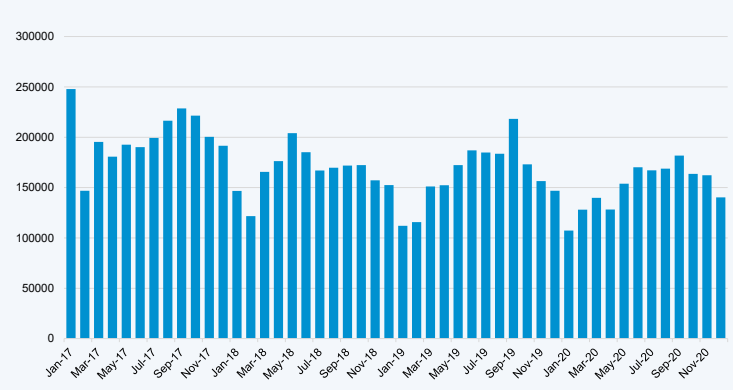
Actors



API by District, 2020



Suspected Cases Tested, January 2017 – December 2020



VIETNAM NATIONAL COMPONENT

Funding Priorities & Programming

Case Management

- RAI3E supports f**acility-based diagnostic and treatment services** through the provision of commodities, training and supervision.
- I**ntegrated community case management** is conducted by commune health staff and through malaria posts to reach mobile, migrant and hard-to-reach populations. Approaches are tailored according to the specific risk group.
- Health workers also **engage communities** on malaria prevention and control through IEC/BCC sessions.
- **VHWs receive training** on how to conduct screening, support treatment adherence and provide health education.
- **Radical cure** of P vivax will be supported by following up each patient to ensure treatment compliance.
- The programme actively engages with **private sector providers** in endemic provinces to conduct surveys on service delivery, provide training on updated diagnosis and treatment guidelines, and monitor the use of substandard, counterfeit or monotherapy medicines.

Vector Control and Personal Protection

- **Mass distribution** of LLINs is conducted every three years to cover all at-risk populations in zones 4 and 5, and in communes in zone 3 with active foci.
- **Continuous LLIN/LLIHN distribution** is provided to special high-risk populations and to account for attrition between mass distributions.
- **Forest-going** populations are offered single LLIN/LLIHNs bundled with repellents.
- In the event of an outbreak or confirmed transmission foci in elimination areas, top-up LLINs are provided.
- The programme will implement a shift from routine entomological monitoring in sentinel sites to **epidemiology-led entomological surveillance**. Entomological assessment will be carried out in outbreaks and persistent foci.

Surveillance

- **Case-based surveillance** has been rolled-out, in line with WHO guidelines on malaria elimination.
- RAI3E continues to invest in **MMS** (Malaria Management System), integrated with the existing eCDS, to better collect and visualize case notification, case investigation and focus investigation data, and thus target elimination activities.
- **Private sector data** is integrated with the national malaria surveillance system.

Burden Reduction

- In communes with the highest risk, **Special Investigation Teams** conduct frequent visits to forest sites to perform active case detection, test, treat and track positive cases, provide preventative tools, and raise awareness.
- A NIMPE/IMPE **task force** oversees field operations in high-risk communes during peak transmission periods.
- **Focal Screening and Treatment** (FSAT) will be provided in high endemic areas in the peak season.

VIETNAM NATIONAL COMPONENT

- **Outbreak preparedness** is maintained through training and the provision of buffer stocks of key commodities.
- Guidelines and SOPs for outbreak preparedness, detection and response will be revised.

Elimination Approaches

- **Case investigation and classification** is conducted at the point of care across the country, while focus investigation is restricted to malaria elimination 'end game' settings and is led by district level staff.
- 100% of foci are investigated and classified. Response is done within 7 days of detection and includes active case detection, treatment and follow-up.
- Case-based surveillance and diagnostic capacities, as well as community sensitization and engagement, will be maintained in areas that have eliminated malaria to **detect reintroduction and prevent re-establishment**.

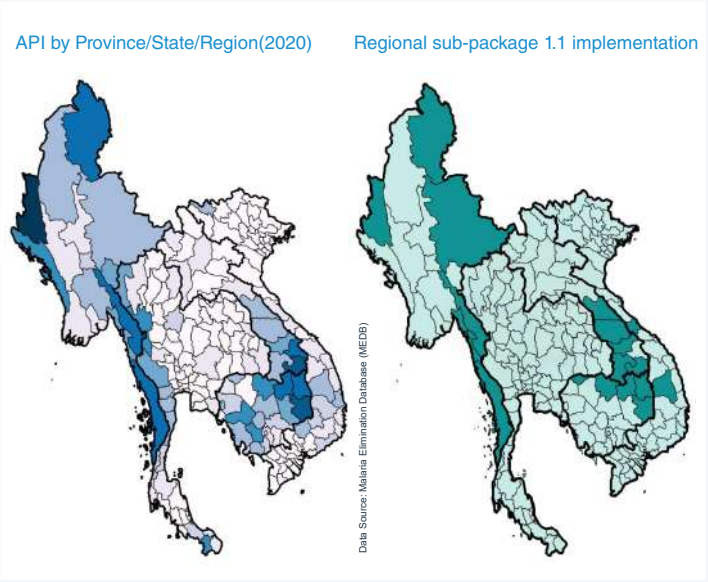
Governance and Coordination

- **Supportive supervision** visits are conducted routinely at all levels.
- **Coordination** between CSOs, and between CSOs and NIMPE, will be strengthened under RAI3E through regular coordination meetings at all levels and regular information sharing.
- Annual **program review and planning** workshops are held at provincial and district levels.
- **Technical Working Groups** review guidelines and update training materials, training curriculums and operational manuals.
- **Financial management** training is provided to **build capacity** at the central, provincial and district levels, in order to improve accountability, efficiency and appropriate resource allocation and utilization.

REGIONAL COMPONENT

The regional component of the RAI3E grant invests **US$ 28.4** million into cross-border initiatives that endeavor to drive the Greater Mekong Subregion closer towards malaria elimination.

- **Concerted regional approaches** to malaria elimination are crucial to achieve elimination of all species in the GMS by 2030.
- Due to malaria's **transmission dynamics**, and the **interconnectedness** of the GMS, malaria cannot truly be eliminated in one country without being eliminated in the entire region.
- **Strong collective action** at the regional level is underpinned by national and sub-national ownership and leadership.
- Drastic declines in malaria incidence in the GMS have led to malaria becoming increasingly restricted to **hard-to-reach areas** that are underserved by the health system, including areas near country borders.

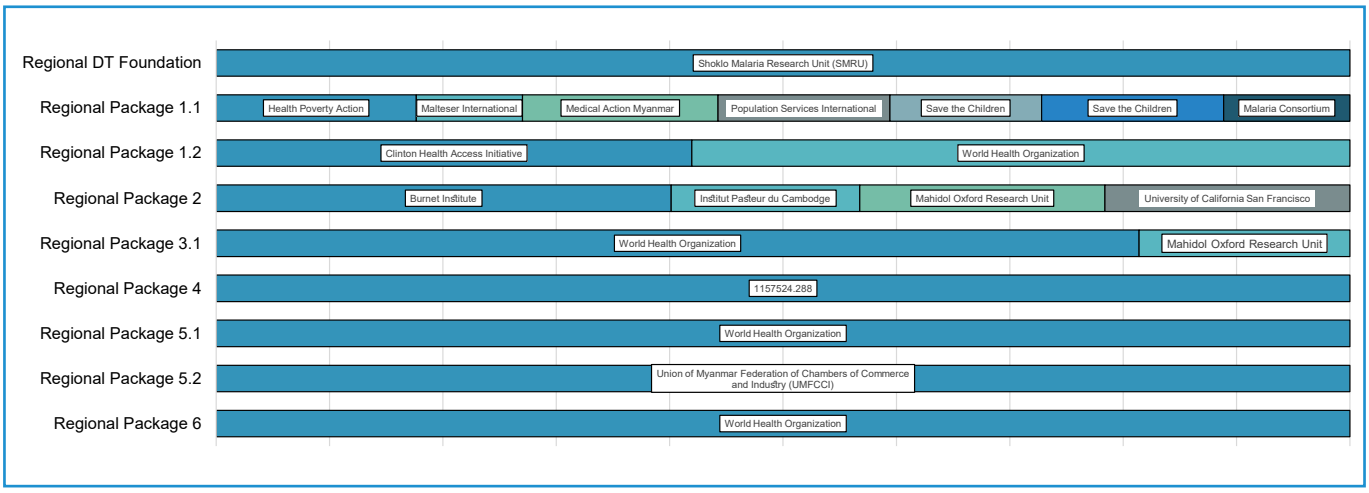


- **Unofficial border crossings risk** spreading malaria from high burden to low burden areas, and spreading drug-resistant strains.

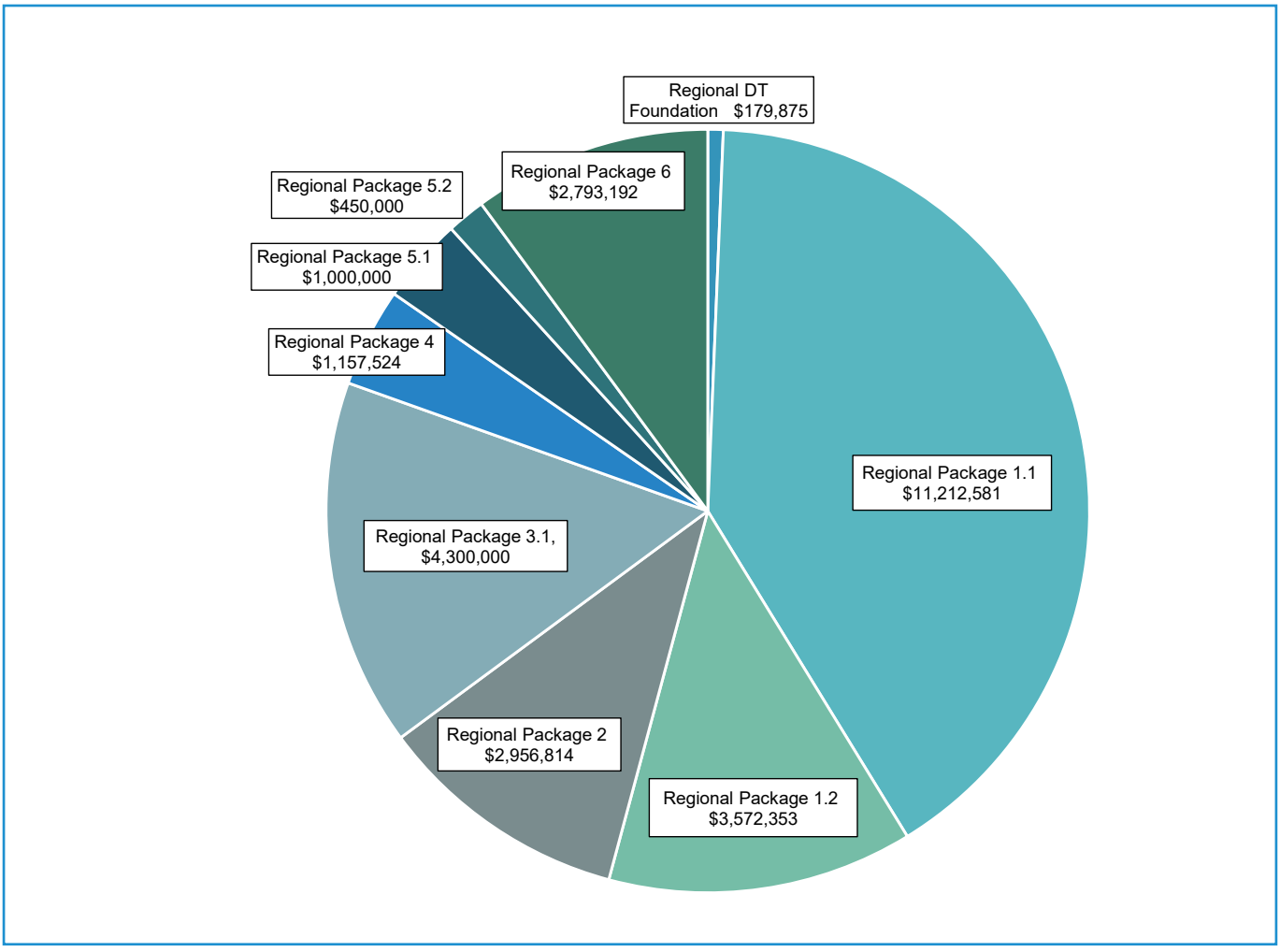
- Targeted action **tailored** to reach **mobile and migrant populations** is key to malaria elimination in the GMS.
- **Targeted programming** is grounded on an evidence base of malaria burden and risk factors of these groups.
- **CSOs** have **important expertise** in reaching and engaging target communities. Coordination and collaboration amongst CSOs is facilitated at the regional level.
- **Multisectoral engagement**, including with non-health sectors such as agriculture, forestry, defense and trade, is leveraged to maximise the impact of programmes.
- **Information sharing** is strengthened between the GMS countries, from the rapid notification of outbreaks near country borders, to more long-term sharing of lessons learnt.
- **Operational research** plays an essential guiding role, aiming to improve delivery mechanisms of current interventions, as well as develop new effective approaches.
- The RAI3E **'learning by doing'** approach identifies areas of programmatic uncertainty and responds with flexibility and agility to research findings.
- The RSC and national CCMs **engage with regional institutions and initiatives**, including ASEAN, APLMA, APMEN, ADB and other development partners to harmonise approaches in the region and beyond.

REGIONAL COMPONENT

Funding by Actors



Funding by Package



REGIONAL COMPONENT

Funding Priorities & Programming

Package 1: Access to quality case management and prevention for hard to reach populations

- Through sub-package 1.1, partners coordinate to provide a **tailored package** of prevention, testing and treatment services to **hard-to-reach** migrant and mobile populations in remote forested border areas.
- Case management is delivered by **community health workers** in high-risk border villages, as well as along common travel routes. Health workers also deliver health education and behaviour change interventions.
- **LLINs** are distributed continuously at malaria posts.
- **Mass screening and treatment** is targeted to areas of high malaria burden amongst settled populations lacking routine access to malaria services.
- **Community points of care** collect data that is standardized and shared at the regional level. Geo-coded knowledge of where points of care are located is used to better understand incidence and other case management indicators.
- Sub-package 1.2 aims to **strengthen cross-border collaboration** through increased involvement and leadership of local authorities and local CSOs to develop joint operational approaches and strategies.
- **Technical assistance** is provided at the sub-national level to develop long-term decentralized capacity to manage surveillance, harmonise approaches and share expertise and strategic information with cross-border counterparts.

Package 2: Operational Research

- RAI3E funds a limited number of **innovative and focused** operational research studies.
- The RA3E OR projects focus exclusively on 1) adjusting the grant during its lifetime, 2) preparing for the post-2023 period, 3) prioritising OR with strong regional implications, and 4) ensuring strong country buy-in and creation of regional OR leadership.
- **Key research themes** are the integration of malaria programs into health systems, P vivax radical cure, optimal tools for vector control, and effectiveness of reactive surveillance and response strategies.
- OR will be **embedded in program design** and supported by an appetite to bring **proven interventions to scale**.

Package 3: Permanent availability of quality health commodities across the GMS

- Therapeutic Efficacy Studies **(TES)** inform the development of malaria treatment policies (funded under sub-package 3.1).
- Studies examining the prevalence of **molecular markers** associated with resistance to specific drugs are also funded.
- Efficient registration processes enable the rapid adoption and procurement of new effective commodities. At the regional level, existing networks of regulators are leveraged to advocate for synergies in countries' regulatory approval processes.

REGIONAL COMPONENT

Package 4: Strengthening regional surveillance

- WHO maintains the **Mekong Malaria Elimination Database (MEDB)** as the core data repository for the GMS.
- **Planned improvements** include a shift to weekly data sharing, integration of more granular data and other data sets.
- The MEDB will also become more interactive and access will be **available** to a larger set of key partners.
- The aims of the package are to unify methods for data collection, cleaning, collation, integration and analysis across the region to better facilitate data sharing and inform planning and response.

Package 5: Enhancing partnership with community and non-health sectors

- Sub-package 5.1 supports a **regional CSO platform** to address access to services in the community. The Platform acts as a **convener** for CSOs to enhance c**oordination and collaboration** with NMCPs and other implementing partners.
- Sub-package 5.2 expands **innovative engagement** with the **non-health corporate** sector to support malaria elimination.
- Examples of corporate engagement in malaria elimination include development of a mobile platform to enable real-time case and stock management, negotiation of improved rates for VMWs to use digital wallets and utilising the fast-moving consumer goods supply chain for elimination commodities.

Package 6: governance, management and monitoring

- The **Regional Steering Committee (RSC)** is a multi-stakeholder governance body that provides oversight and guides implementation of the RAI3E. It is supported by the RSC Secretariat. The RSC and its Secretariat are funded under sub-package 6.1.
- **UNOPS,** the Principal Recipient of RAI3E, funded under sub-package 6.2, works with national programmes to effectively manage RAI3E resources.
- The **Independent Monitoring Panel** provides independent expertise to assess RAI3E implementation and make recommendations for remedial actions.

INNOVATION IN RAI3E

RAI3E funding is strategically invested in innovative new technologies, medicines and interventions to fight multi-drug resistance and accelerate progress towards elimination.

Aggressive approaches in Cambodia and Lao

- **Aggressive interventions** to vanquish P falciparum are being employed in Cambodia and Lao PDR.
- Depending on foci classification, Cambodia employs **synergistic combinations of interventions**, including VMW/MMW deployment near the forest, LLIN mass campaigns, targeted drug administration (TDA), intermittent preventive treatment (IPT) and weekly door-to-door fever screening.
- In Lao, **aggressive strategies used in hotspot areas** include TDA, IPT, door-to-door fever screening every two weeks, top-up LLIN distribution and targeted distribution of LLIHNs.
- TDA is given to men aged 15-49 in Cambodia, who have the highest risk of malaria, and to men and women aged 7- 49 in Lao.
- Foci management also includes **training** of health workers, **community engagement and social mobilization.**

Multi-generational community engagement in Thailand

- Thailand's national malaria program plans to target **360 schools** in the highest burden villages to implement a **'junior VHV approach'**.
- Teachers nominate students of **ages 8-12 years** with the potential to become junior VHVs (Village Health Volunteers).
- Junior VHVs learn about the role of community health workers with integrated malaria elimination interventions, and are responsible for **communicating malaria awareness** to their peers, **families and communities**.
- Teachers participate by encouraging and supervising students' activities.

INNOVATION IN RAI3E

Testing new opportunities for P vivax radical cure in Cambodia

- Eliminating the P vivax **hypnozoite reservoir** is critical to eliminating all species of malaria in the GMS by 2030.
- Operational research funded under RAI3E is testing and evaluating different new radical cure regimens, comparing the standard **14-day course of primaquine** (PQ) (15mg) to a shortened **7-day course of PQ** (30mg) and a **single dose** (300mg) of **tafenoquine** (TQ).
- To be eligible for the trial, patients must not have G6PD deficiency and must not be pregnant or breastfeeding.
- Patients are **followed up** on days 3 and 7, and monthly thereafter for a period of six months.
- Outcome measures include the **efficacy** of RCT, including the rate and risk factors of **recurrence**, as well as the incidence of any **adverse events** such as haemolysis.
- **Pharmacokinetic** and **pharmacogenetic** metrics are also included to better understand the factors underlying treatment efficacy.

RAI3E SPOTLIGHTS

Health and Community Systems Strengthening

- **Engaging with communities** is essential in the last mile of the fight for malaria elimination.
- **Health education** interventions sensitise communities to the importance of using preventive tools and seeking testing.
- With the fight against malaria led by health workers from the very communities they serve, communities have **increased trust** in the programme and the motivation to act together to eliminate malaria.
- RAI3E also **champions community-led approaches** by investing in the capacity building of local community-based organizations (CBOs).
- With the continuing decline in malaria cases in the GMS, village and mobile malaria workers could deskill at malaria case management, and communities may be less likely to engage if the health workers do not also treat other health problems.
- The region is therefore moving towards the **integration of the community malaria worker role into broader community health platforms** that provide a package of essential preventive, diagnostic and treatment services to their communities. Malaria surveillance systems are also being integrated with general health surveillance systems.
- Health systems are the backbone of the fight against malaria. **RAI3E invests in health** systems by supporting the training of health workers, strengthening the linkages between public, private and not-for-profit health sectors, building fit-for-purpose health information systems that link to the community front-end through the enhanced use of technology (such as smartphones), and collaborating with partners to make supply chains more efficient and reliable.

RAI3E SPOTLIGHTS

Human Rights and Gender

- RAI3E **integrates human rights considerations** in its programming through interventions specifically aimed at increasing access to malaria services for the most vulnerable populations, including migrants, refugees, ethnic minorities and rural and remote populations.
- Gender is a major determinant of health and a **gender lens** is crucial in the design of malaria programs.
- Although **adult men represent the majority of malaria cases** in the GMS, mostly due to labour in forest areas, both risk of disease exposure and barriers to accessing healthcare have gendered dimensions that affect the health and well-being of all individuals.

- **Gender affects the risk of exposure to malaria transmission:**
  - Men are more likely to work in forest or forest fringe areas, especially at peak biting times, and are more likely to sleep inside the forest.
  - Forest-goers, which are mostly adult men, generally have low bednet utilisation rates.
  - Women are at risk while preparing food, seeking water or carrying out agricultural work in the early evening hours.
  - Pregnant women have an elevated risk of developing severe falciparum malaria.

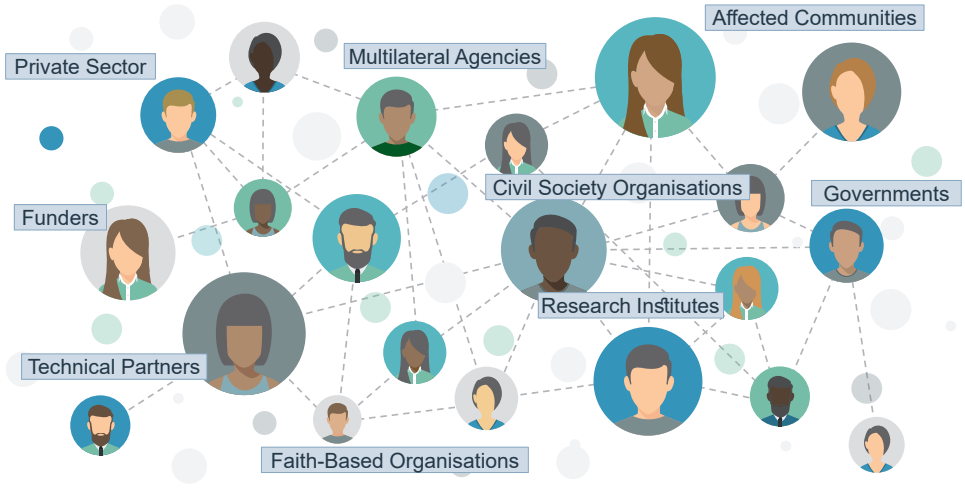
- **Gender influences access to healthcare:**
  - Women generally have less of their health needs met then men, despite a higher demand for healthcare.
  - Women generally have less control over the use and allocation of household resources.
  - For women with Pv infection, qualitative G6PD tests do not adequately assess hemolysis risk with radical cure treatment, leading to lower treatment rates among women.
  - Pregnant women face cultural limitations on mobility, particularly to public places like health facilities.
  - Men are more likely to migrate for work, with difficulties finding or being reached by health services in unfamiliar settings.

- Responsive programming in RAI3E depends on **gender equity and social inclusion** at all decision making levels. RAI3E partners have identified **gender-related barriers** as a key issue, and are taking positive steps to improve gender equity in **leadership and at all levels of decision making.**

OVERVIEW OF THE RSC

Regional Steering Committee

- The RAI Regional Steering Committee (RSC) was established in late 2013 as an **oversight mechanism** for the Global Fund RAI grant (2014-2017).
- The RSC follows the Global Fund's Country Coordinating Mechanism (CCM) model as a **multi-stakeholder governance body** that provides strategic guidance and serves as a forum for coordination, cooperation and accountability in the implementation of the various programmes supported by the grant.
- The stakeholders represented on the RSC include: recipient governments, multilateral agencies, technical partners, funders, civil-society and faith-based organisations, research institutes, private sector, and affected communities.
- Members of the RSC collectively **take responsibility** for the strategic direction and implementation of the RAI3E grant.
- The **mandate of the RSC** includes selecting recipient implementers, overseeing grant implementation progress against program objectives, ensuring funding is used in accordance with agreed strategic priorities, and steering emergency responses, reallocating Global Fund resources as needed.
- The **RSC collaborates** with UNOPS (the principal recipient), national CCMs, the Global Fund, LFAs and technical partners, and works closely with the World Health Organization through the support of the Emergency Response to Artemisinin Resistance (ERAR) Hub.
- The **guiding principles** of the RSC are:
  1. Ensuring that grant implementation is focused, fast and flexible.
  2. Ensuring access to high quality data.
  3. Enabling real partnership: thinking big and thinking big together.
  4. Creating political leverage and joint funding platforms through linking with regional Asia Pacific organizations.
  5. Complementing the role of national Country Coordinating Mechanisms (CCMs).
  6. Ensuring a transparent process for engagement of the right implementing partners.



RSC Secretariat

- The RSC Secretariat was established in September 2014, under a hosting agreement with the World Health Organization.
- Its role is to support the functioning of the RSC by arranging regular meetings, facilitating coordination and collaboration with governments and partners, and supporting the RSC Independent Monitoring Panel.
- The RSC Secretariat is led by the RSC Executive Secretary and is staffed by a small number of permanent and temporary staff.

FOR FURTHER INFORMATION, PLEASE CONTACT:

RSC Secretariat
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