

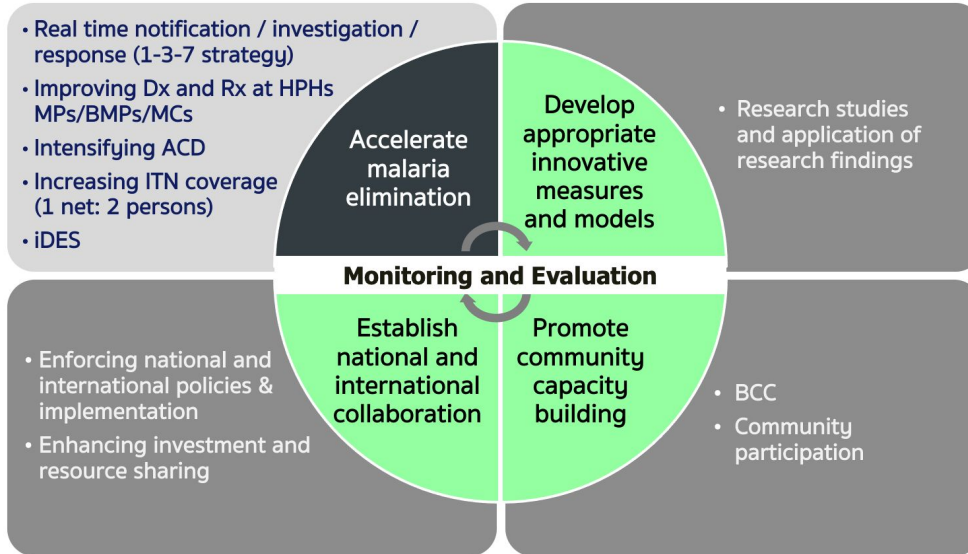


MALARIA SURVEILLANCE IN THAILAND

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National Malaria Elimination Strategy in Thailand

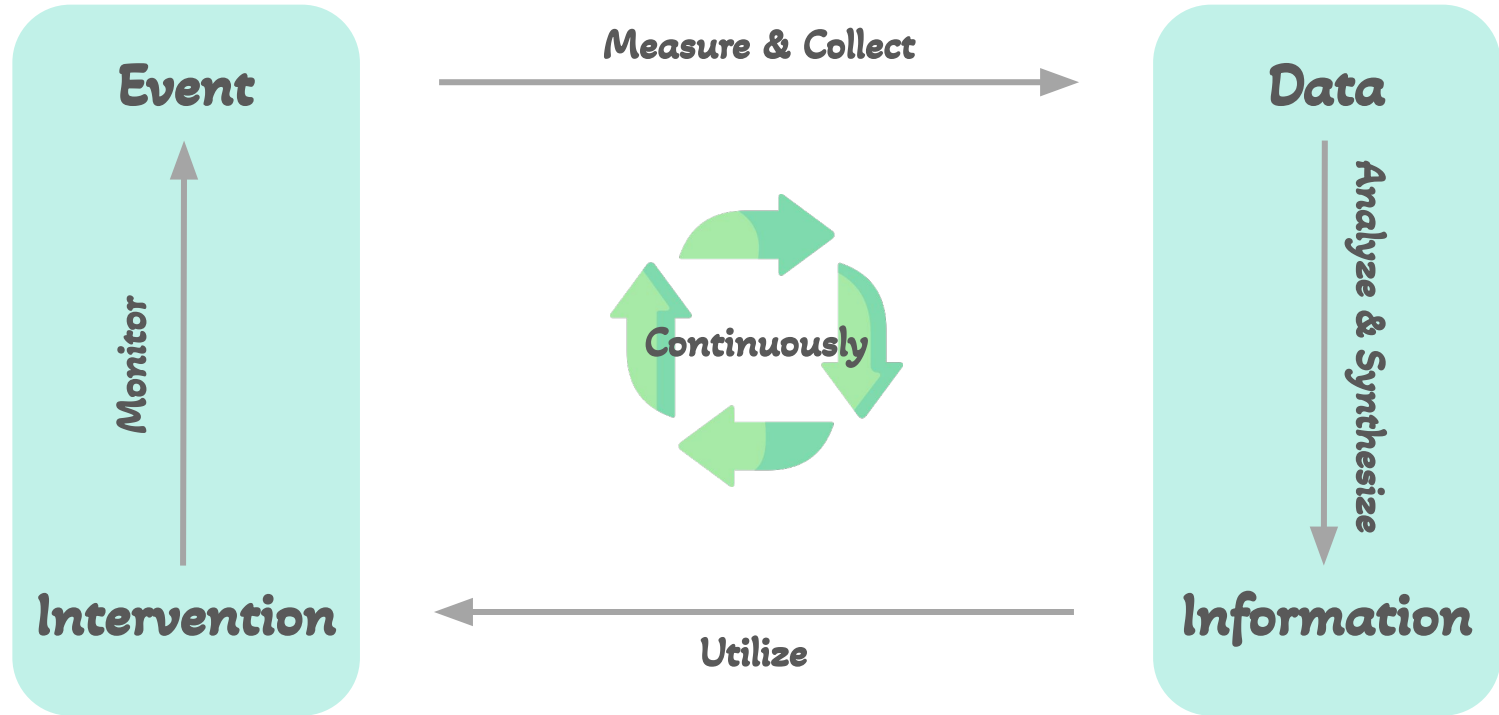


**Pf Elimination
(2023)**

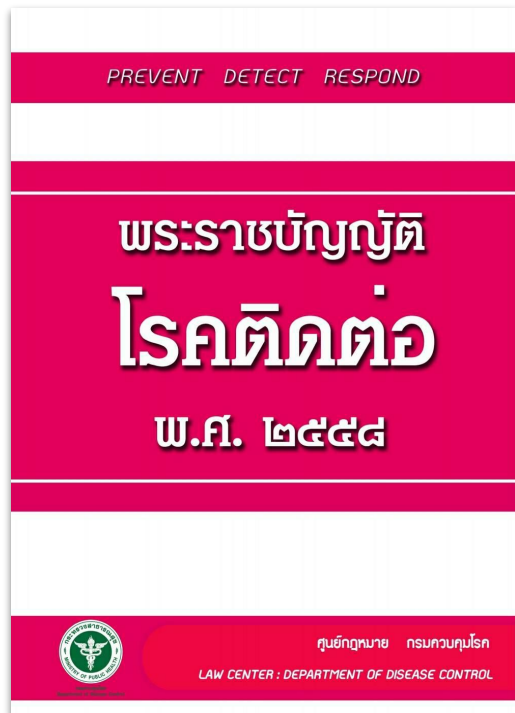
**Free from
Malaria
(2024)**



Surveillance Framework in Thailand



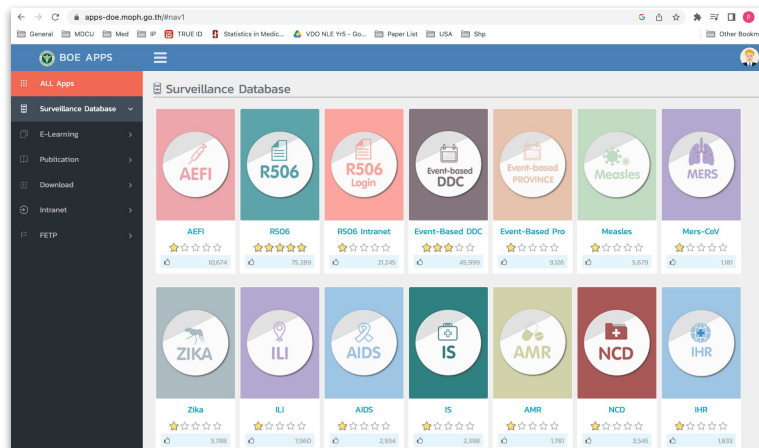
Malaria Surveillance in Thailand



Communicable Disease Act 2015

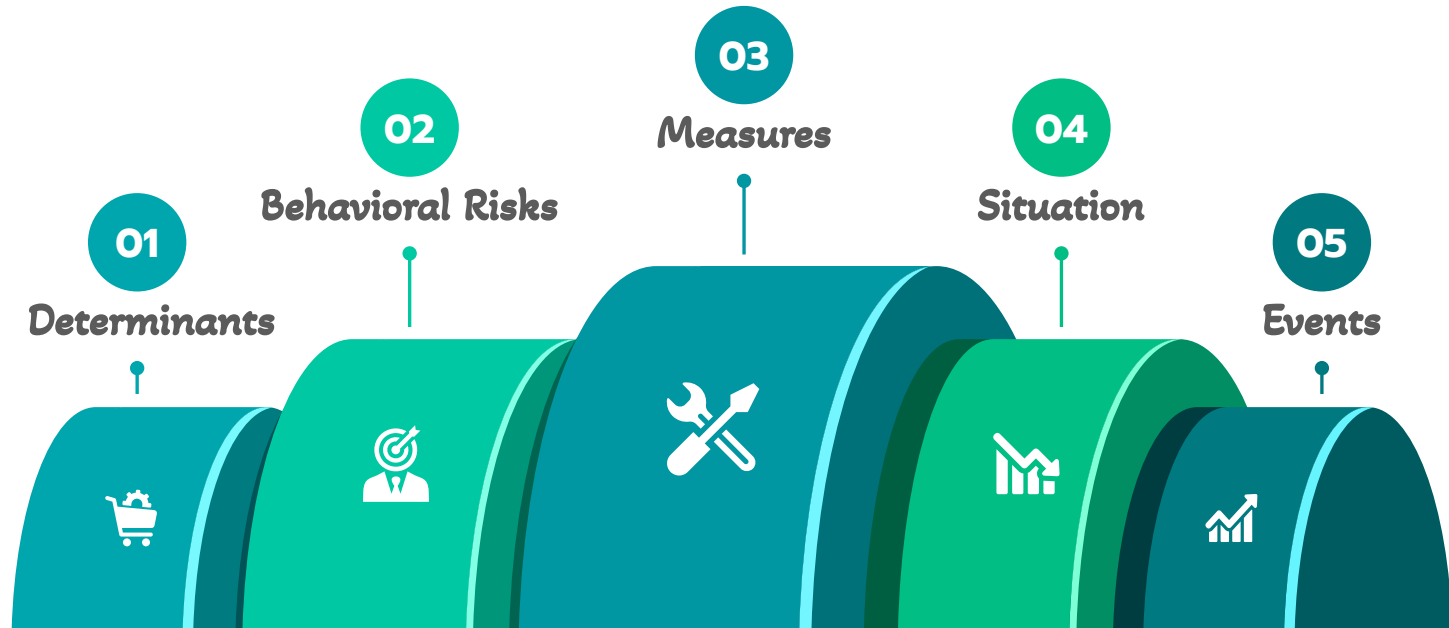


Malaria Online

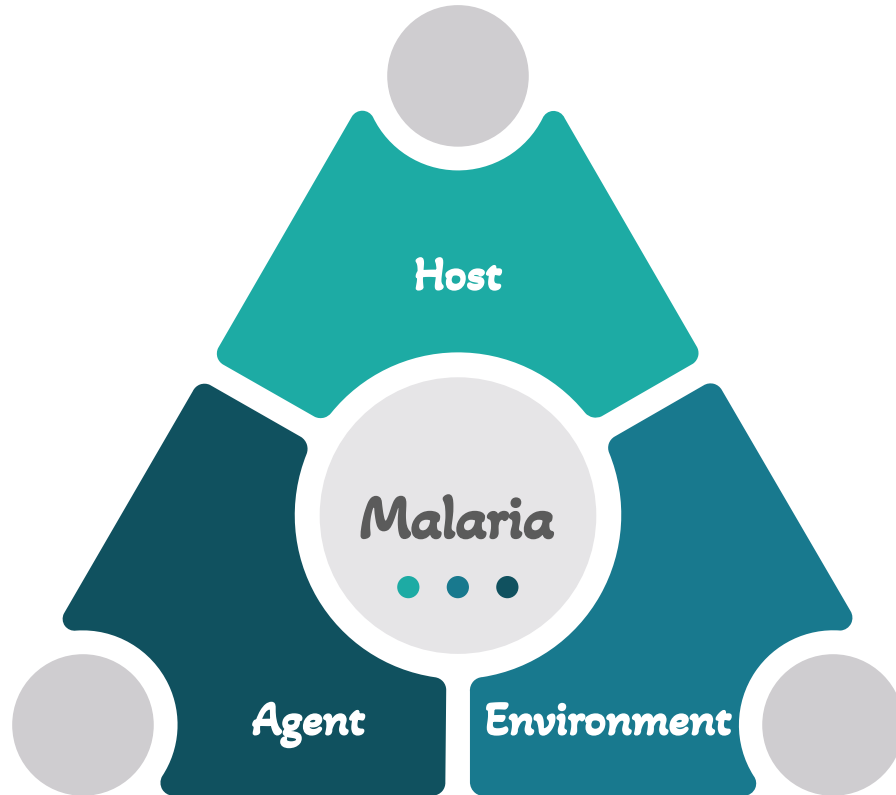


R506 Database

META Surveillance



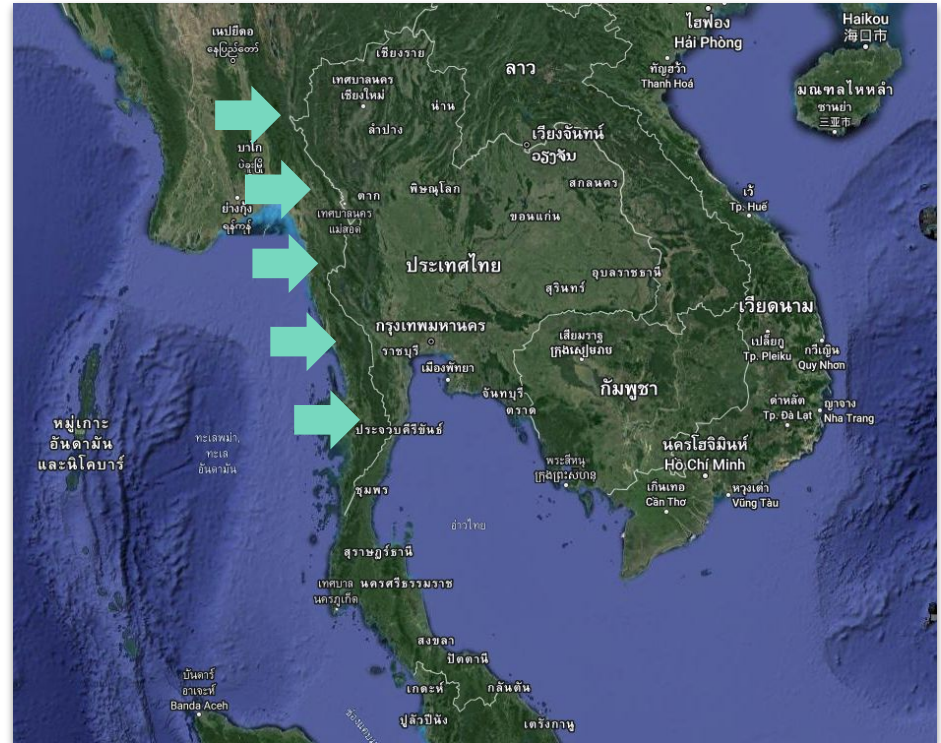
Dimension 1: Determinants (Risks)



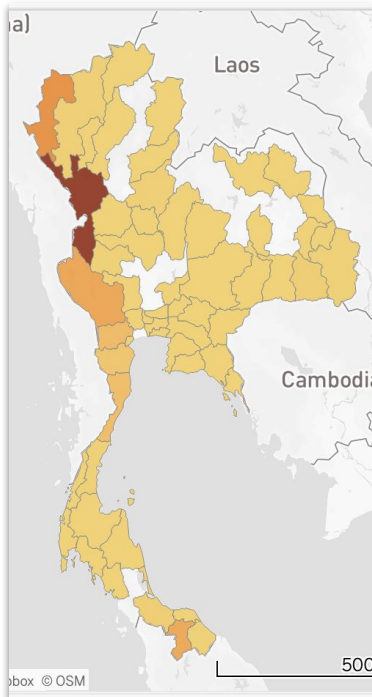
Susceptible Hosts + Potential Spreaders

Individuals with little or no immunity to malaria (young children / pregnant women / travelers)

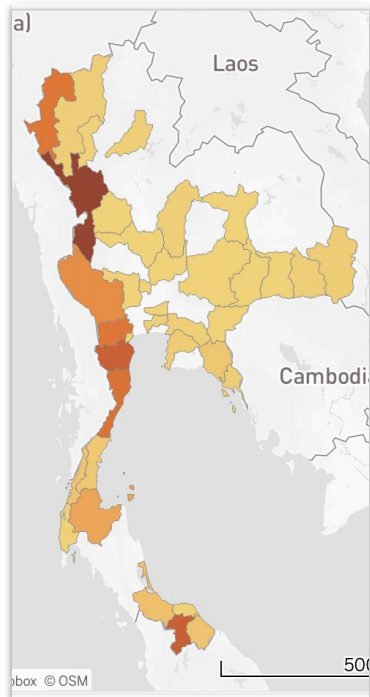
Poor people living in rural areas who lack access to health care (migrants)



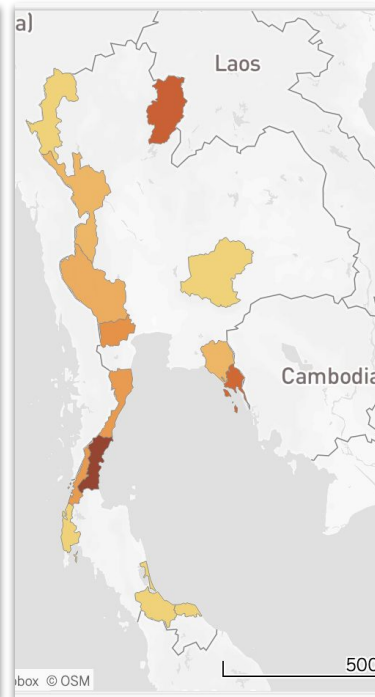
Agents - Country Level, 2020 - 2022



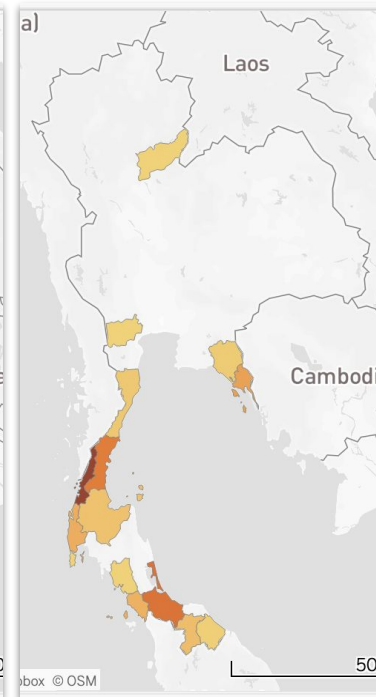
P. vivax



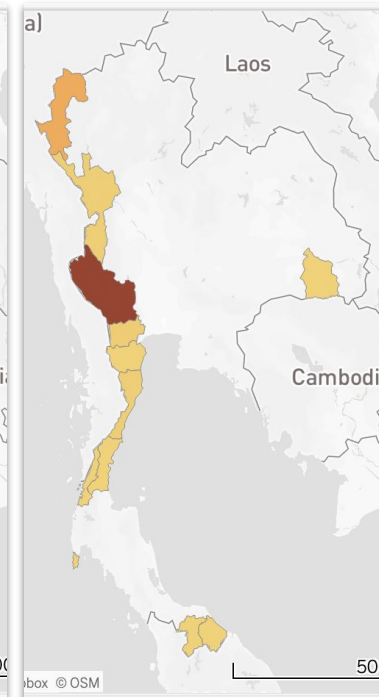
P. falciparum



P. malariae

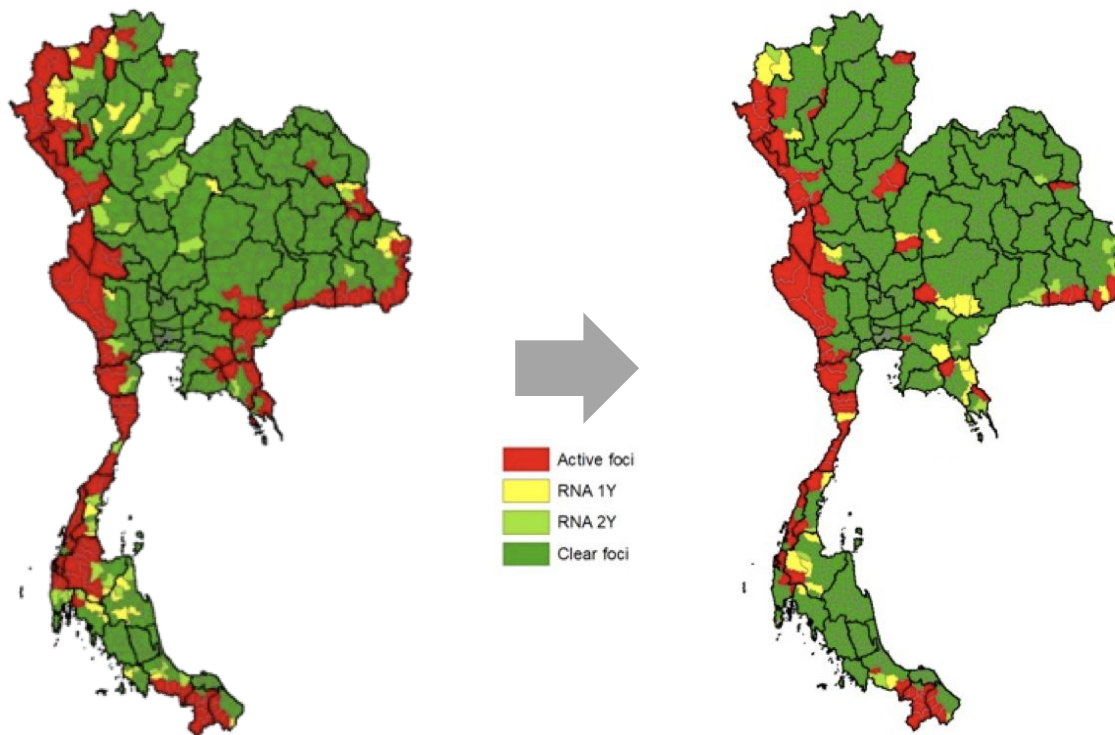


P. knowlesi

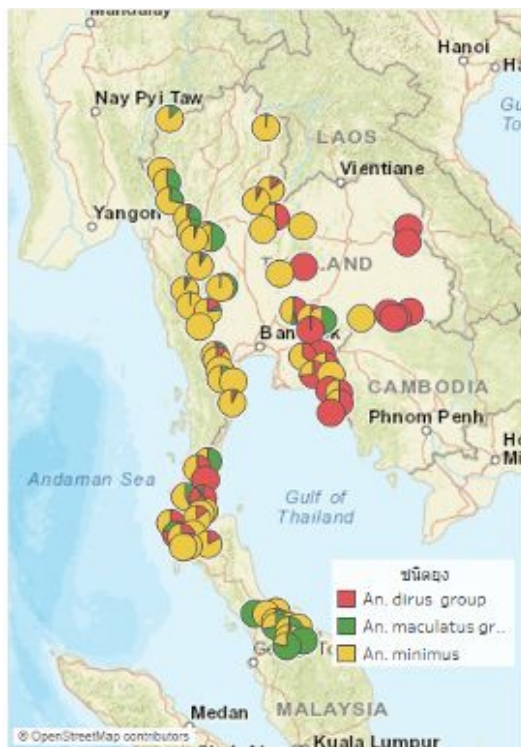


Mixed

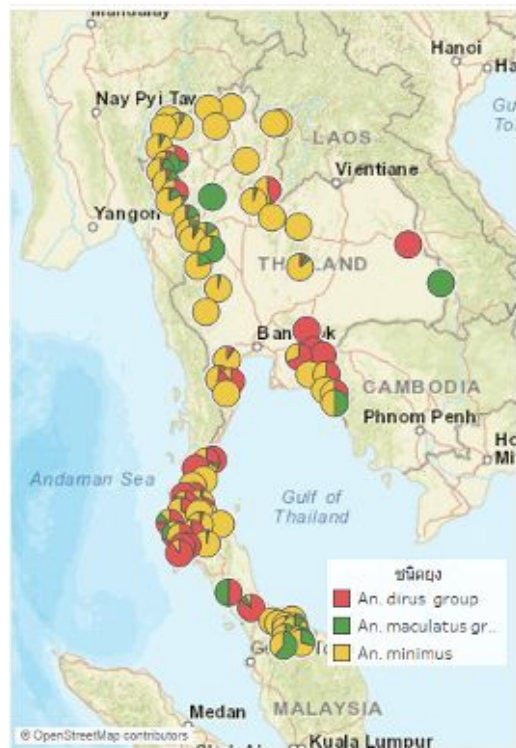
Environment - Foci, Country Level, 2017 & 2021



Environment - Malaria Vectors, Country Level, 2022

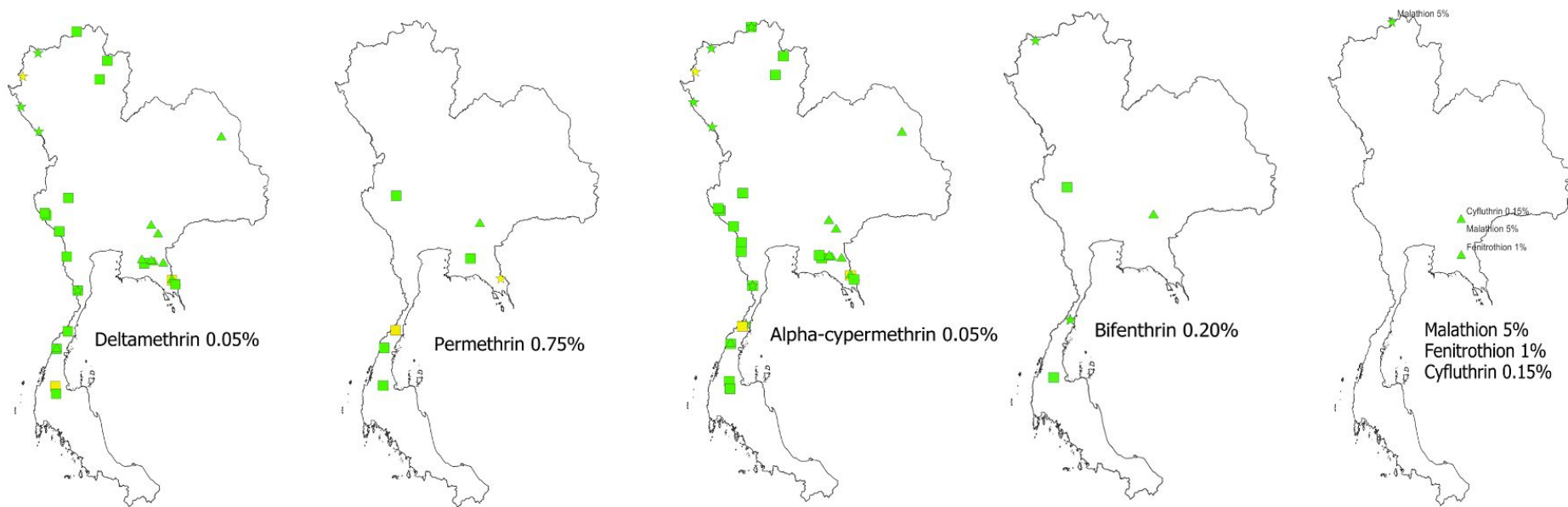


Transmission areas (A)



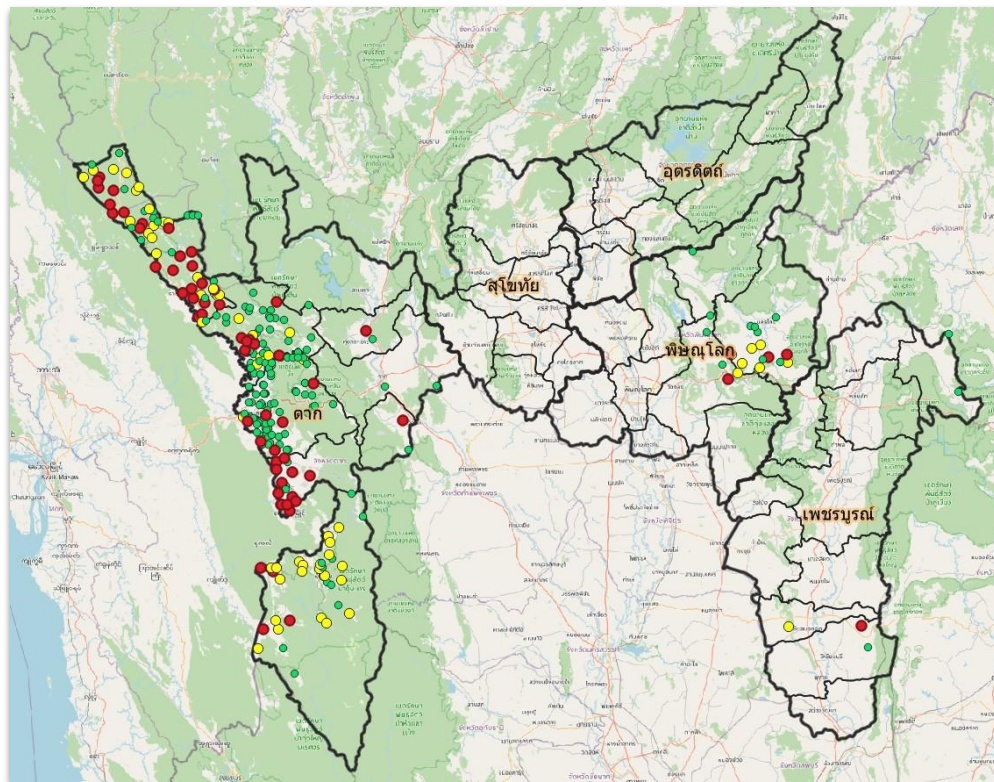
Non-Transmission areas (B1)

Environment - Insecticide Resistance, Country Level, 2022



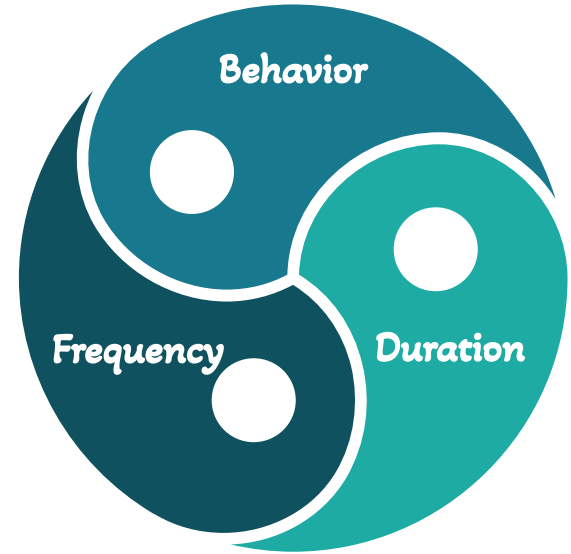
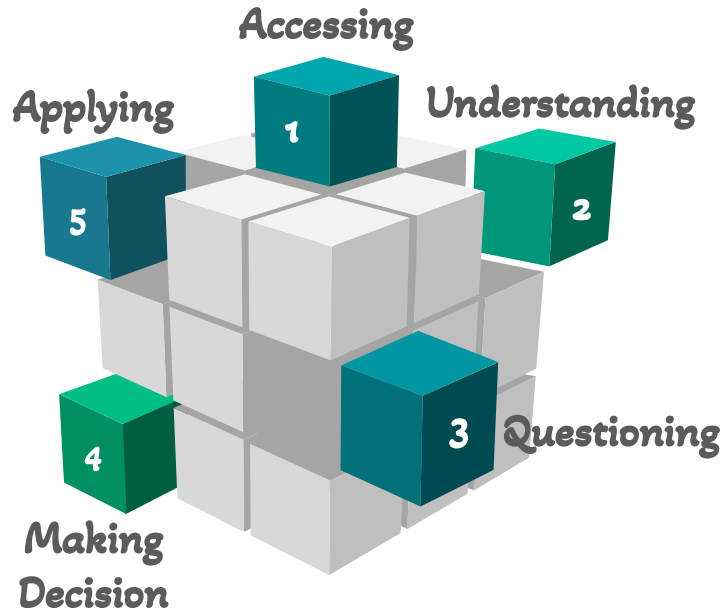
△ *An. dirus* complex ☆ *An. maculatus* group □ *An. minimus* complex ■ Susceptible ■ Possible resistance

Environment - Foci, Health Region 2, 2022



- **A1:** Village with reported indigenous malaria cases in current financial year
- **A2:** Village without indigenous malaria cases for past 1-3 years
- **B1:** Village without indigenous malaria cases for more than 3 years but with vectors

Dimension 2: Literacy & Behaviors (Risks)

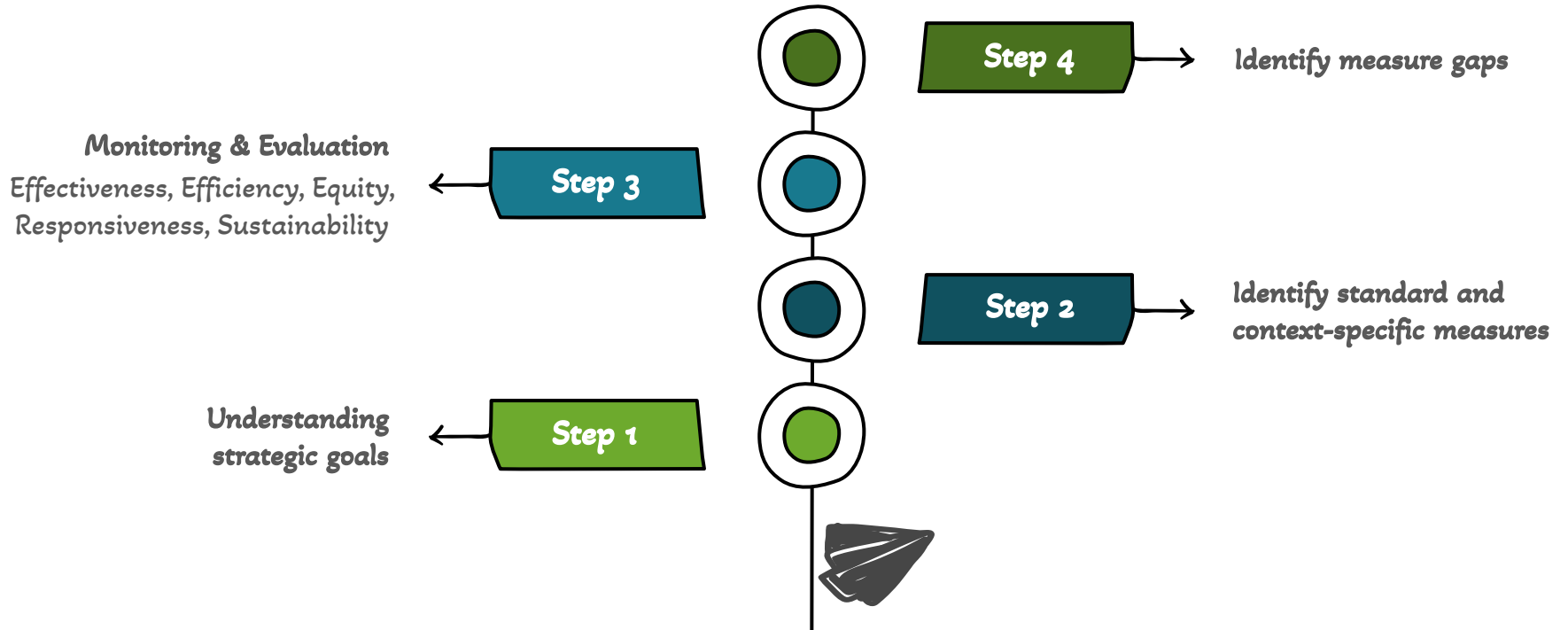


Movement & Behaviors on the Thai-Myanmar Border

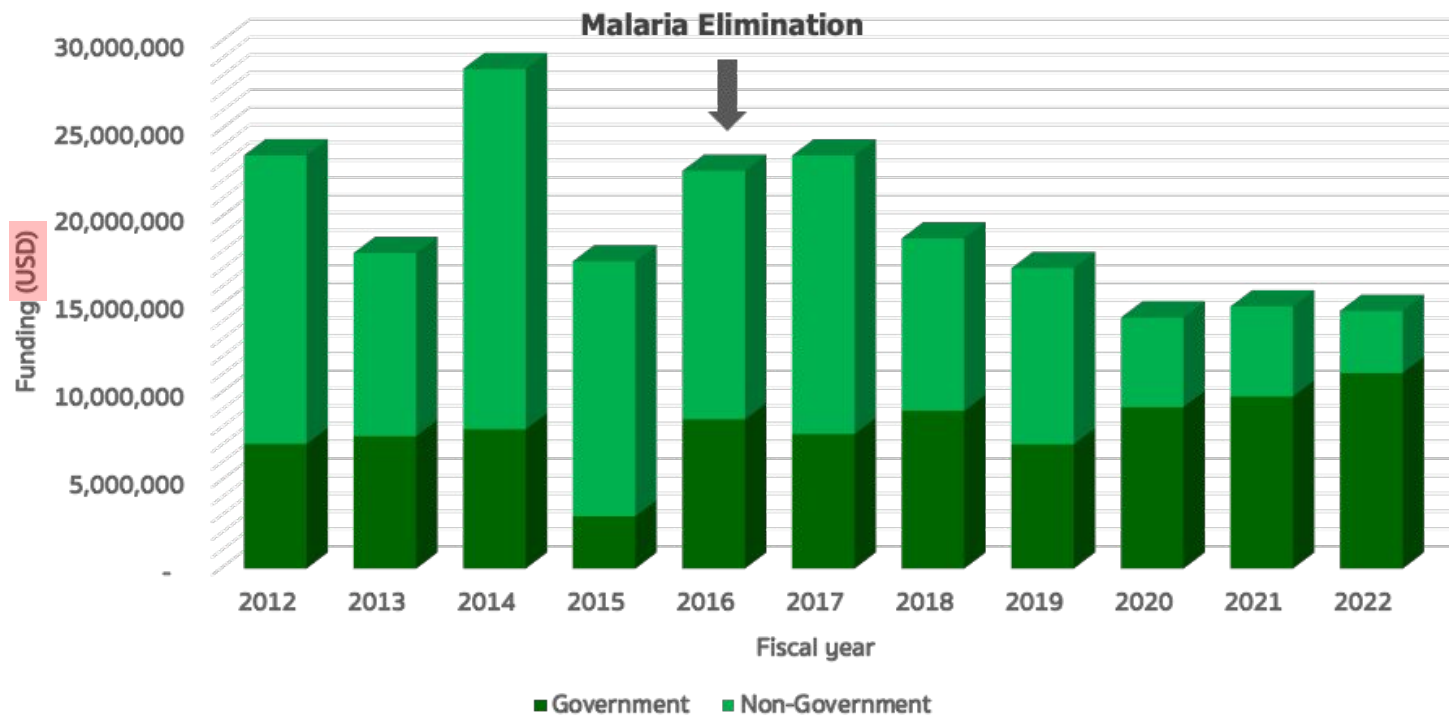
Human population movement and behavioural patterns in malaria hotspots on the Thai–Myanmar border: implications for malaria elimination

Results: Trips were more common in the **dry season**. Malaria risk was related to the **number of days doing outdoor activities** in the dry season, especially trips to Myanmar, to forest areas, and overnight trips. **Trips to visit forest** areas were more common among participants **aged 20–39, males**, individuals with **low income, low education**, and especially among individuals with **forest-related occupations**. **Overnight trips** were more common among males, and individual with forest-related occupations. Forty-five participants reported having confirmed malaria infection within the last year. The main place of malaria blood examination and treatment was **malaria post and malaria clinic**, with participants usually **waiting for 2–3 days from onset fever** to seeking diagnosis. Individuals using bed nets, living in houses with elevated floors, and houses that received indoor residual spraying in the last year were less likely to report malaria infection.

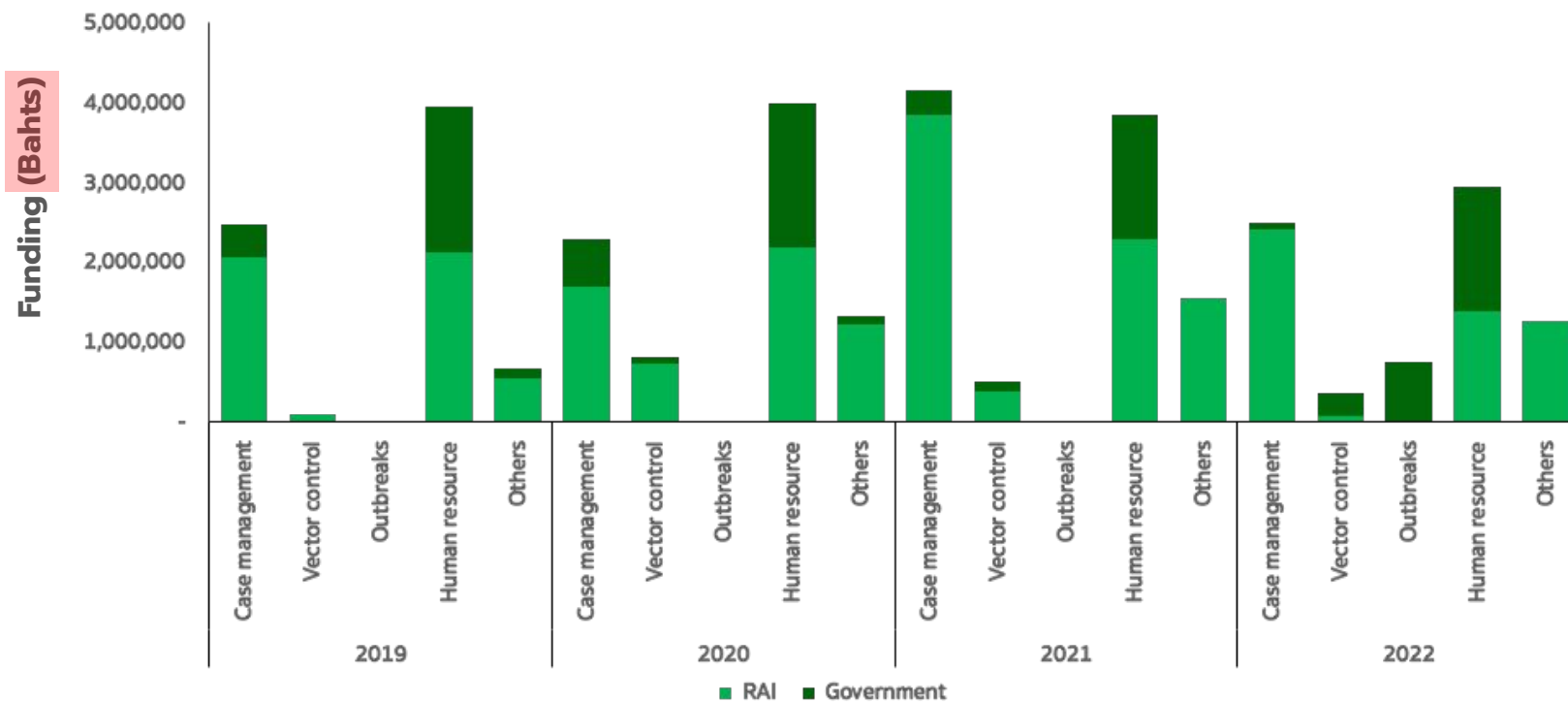
Dimension 3: Measures



Financing, Country Level, FY 2012 - 2022



Financing, Health Region 2, FY 2019 - 2022



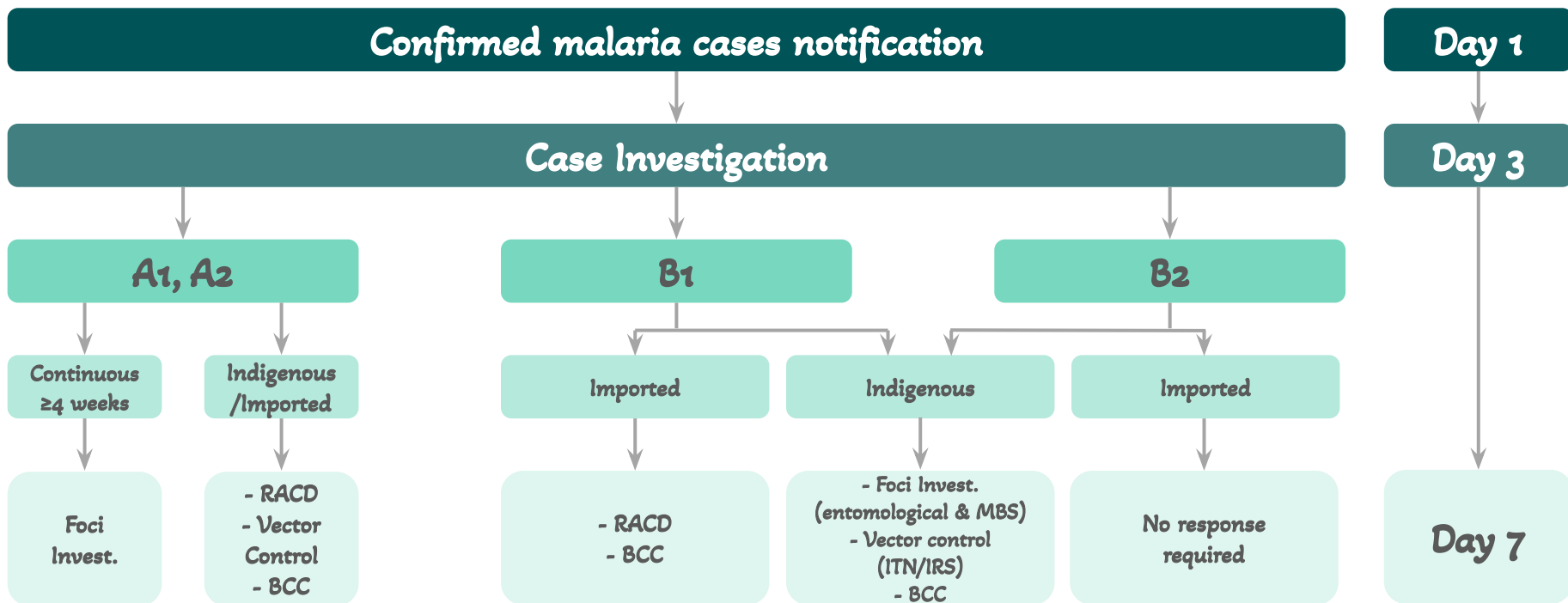
Control Measures, Country Level, 2022

Year	No. of household	No. of pop at risk (A1A2)	No. of LLIN distribution	No. of LLIN 3 yrs	Pop protected by LLIN (1:1.8)	% LLIN Coverage 3 yrs (2020-2022)
2018	2958	843,202	262,454	434,135	781,443	93
2019	5516	675,943	170,421	380,515	68,4927	101
2020	5695	556,420	103,288	311,641	560,954	101
2021	3758	480,438	131,029	131,029	503,206	105
2022	2009	465,544	50,661	50,661	350,204	75

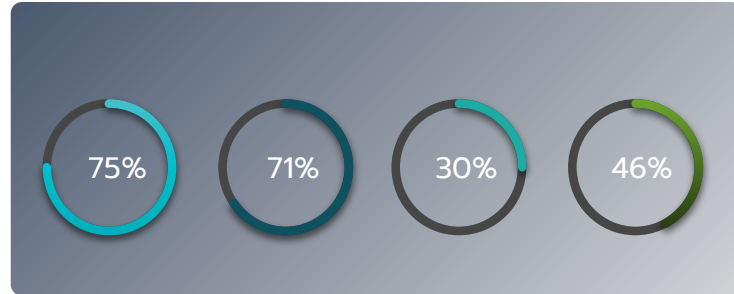
Control Measures, Health Region 2, 2022

Strategy	FY 2018		FY 2019		FY 2020		FY 2021		FY 2022	
	Target	Results	Target	Results	Target	Results	Target	Results	Target	Results
Number of cases		2,397		1,649		1,297		944		5,211
% Coverage LLIN	90%	87%	90%	135%	90%	115%	90%	110%	90%	58%
Strategy 1-3-7										
Strategy 1	74%	56%	74%	83%	74%	92%	90%	94%	95%	92%
Strategy 3	99%	47%	99%	69%	99%	94%	95%	98%	95%	95%
Strategy 7	64%	68%	64%	80%	64%	89%	90%	95%	85%	91%
Follow-up (Fu)	45%	8%	50%	32%	55%	57%	60%	80%	50%	48%
Active Foci (village)	0	160	0	117	0	146	0	84	0	203

Case Notification, Investigation, and Response



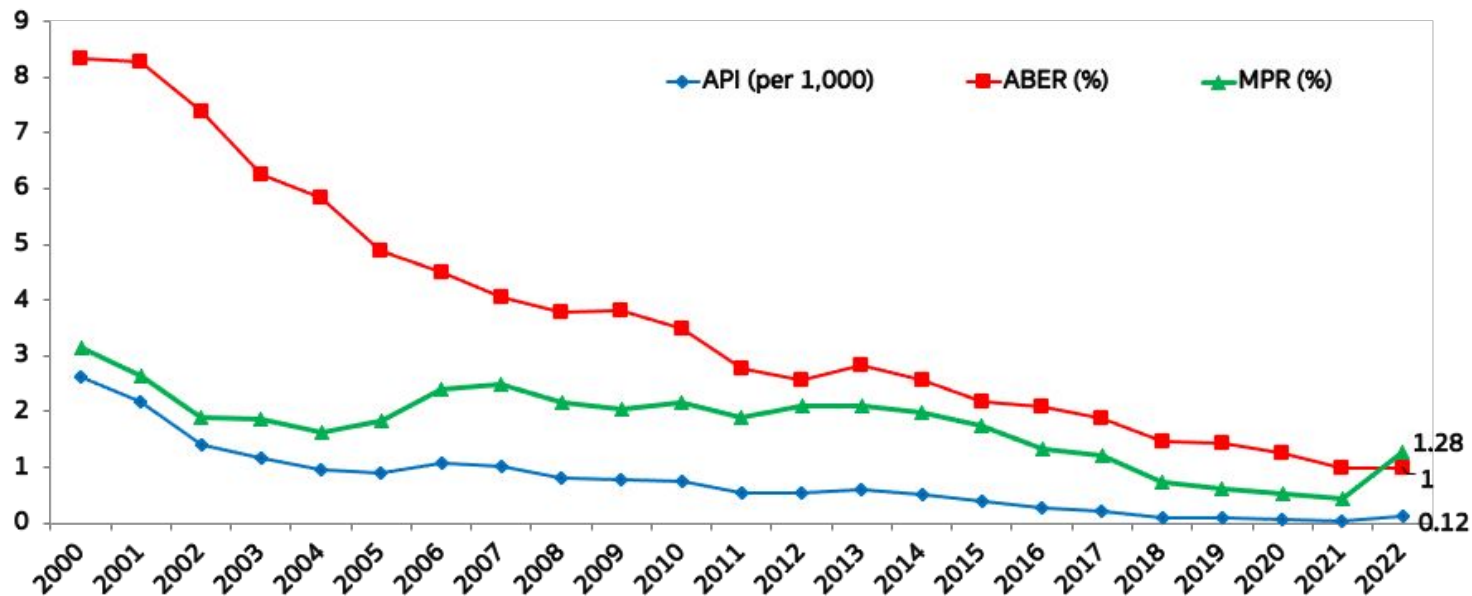
Dimension 4: Situations



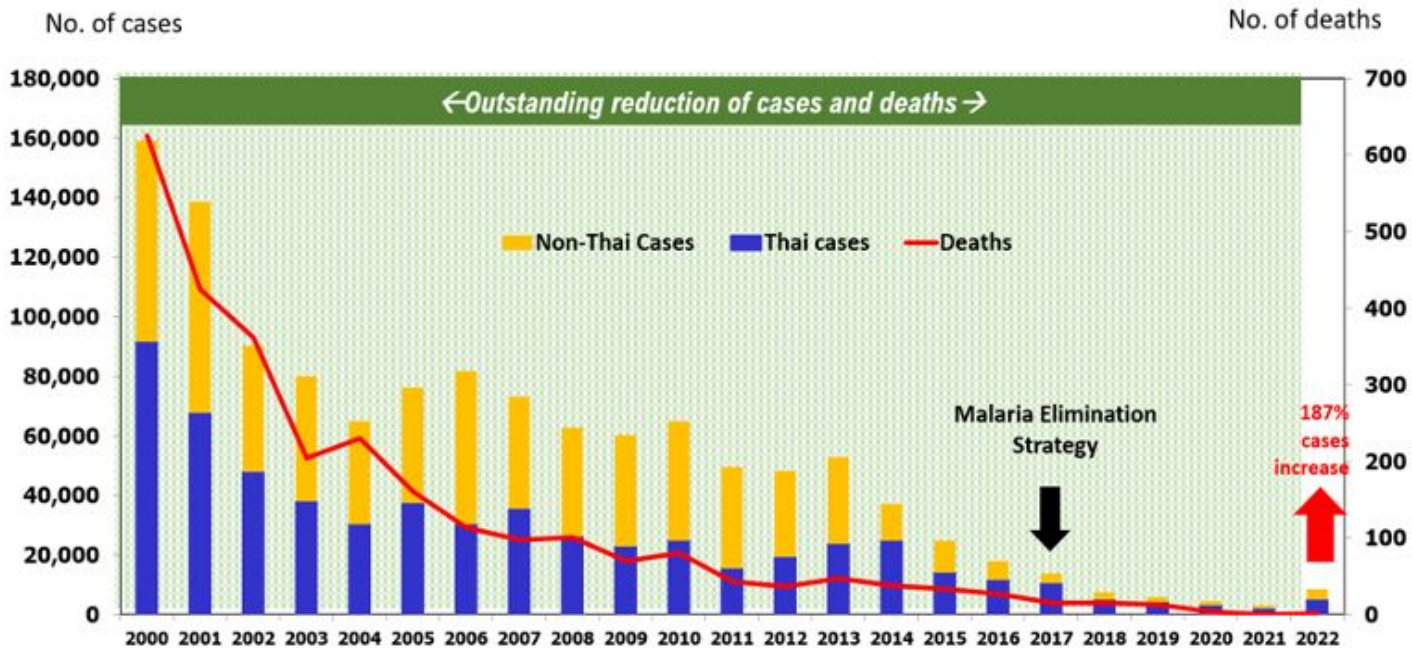
2540 TOTAL

POWER

Situation - Country Level, 2000 - 2022



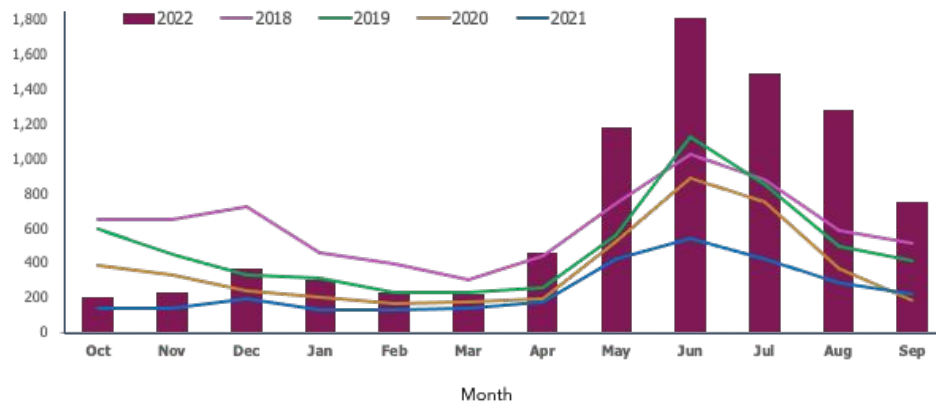
Situation - Country Level, 2000 - 2022



Situation - Country Level, 2022

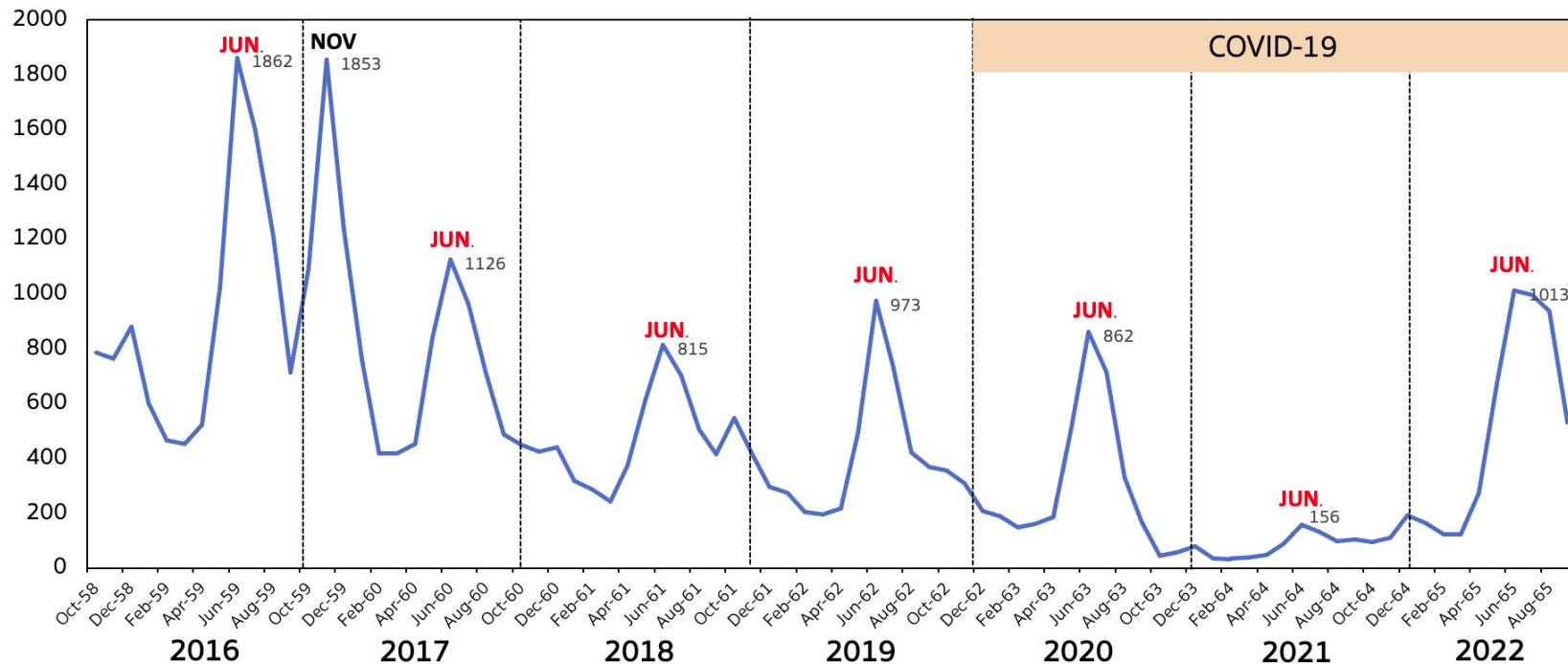


- 636 active foci, 35% increase from last year (470 active foci in 2021)
- 8,495 malaria cases, 188% increase from last year (2,951 cases in 2021)
- 1 malaria death from *P. knowlesi*
- Majority of cases were clustered at the Thai-Myanmar border
- Most cases were non-Thai cases (55%), aged ≥ 15 years (71%)*
- 53% indigenous cases (3,669 cases)
- 95% *P. vivax* (8,061 cases), 3% *P. falciparum* (249) and 2% *P. knowlesi* (149)



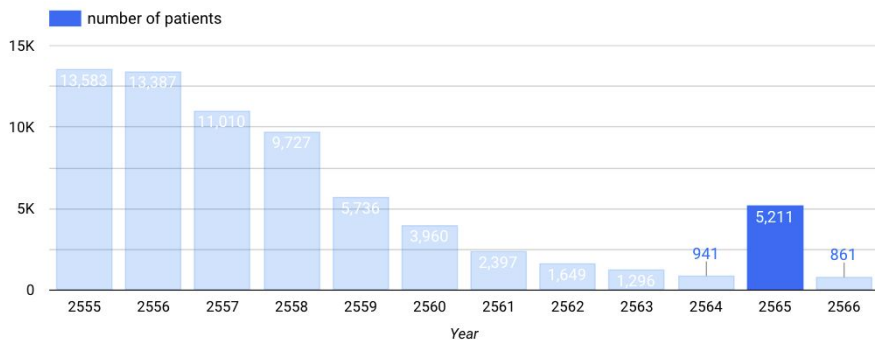
Situation - Health Region 2, 2022

No. of cases



Situation - Health Region 2, 2022

Number of malaria case



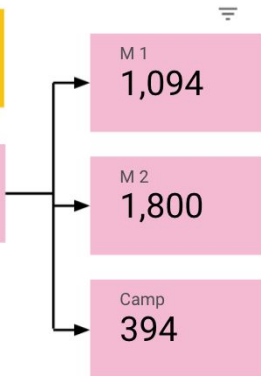
Number of case
5,211

Male
3,586

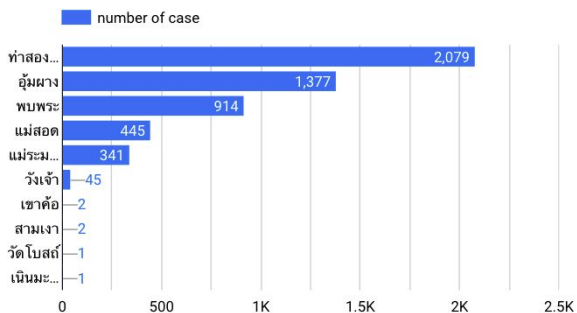
Female
1,625

Thai
1,923

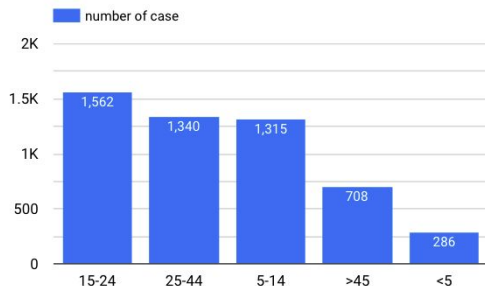
Non-Thai
3,288



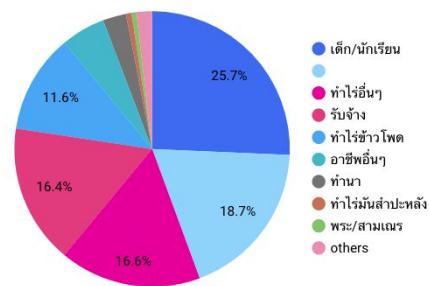
Number of case by district



Classification of malaria case age groups



Classification of malaria case by occupation



Dimension 5: Abnormal Events

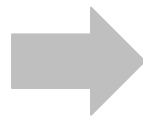


กรมควบคุมโรค
Department of Disease Control



Criteria to report the event (ODPC₂):

1. The first case of the village
2. An Event that is more than 4 weeks
3. An indigenous case in area B



Consider activation of EOC

META Surveillance to Awareness



Summary



- *Surveillances in every dimension are critical to explain the epidemic of Malaria in 2022.*
- *Major challenges of Malaria Elimination:*
 1. *Increased migration at the border*
 2. *Disruption of health services during the COVID-19 pandemic*
 3. *Lack of strong M&E*
 4. *Lack of data in some dimensions*

Next Steps



- *Strengthening data sharing and coordination between countries*
- *Supporting behavioral research at the borders*
- *Innovating more contexts-specific measures, especially at the borders*
- *Improving health system resilience to maintain adequate health services*



Question & Answer