APLMA | Asia Pacific Leaders Malaria Alliance

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MORU Tropical Health Network

Policy Brief

Border Malaria in Asia Pacific: Strengthening Cross-Border Collaboration for Sustainable Elimination

Migrant farmers at the Cambodia-Thailand border
Photo by John Rae, The Global Fund

Border malaria remains a critical threat to elimination progress across the Asia Pacific, as population mobility, porous borders, and uneven capacities between neighbouring countries continue to drive importation, re-establishment, and outbreak risks. Drawing on stakeholder perspectives from four Asia Pacific subregions, this policy brief highlights the importance of cross-border collaboration in addressing border malaria and sustaining progress towards the 2030 regional elimination goal.

Key Messages

- **There is no one-size-fits-all model for cross-border collaboration on malaria,** and countries should adopt approaches tailored to border typology, epidemiological risk, security conditions, and institutional capacity.
- **Cross-border malaria collaboration must be institutionalized,** embedding coordination within formal mandates and structures while leveraging informal mechanisms as practical entry points.
- **Routine, reciprocal cross-border data sharing** should prioritise timeliness and usability over full harmonization, focusing on minimum datasets and fit-for-purpose arrangements.
- **Strengthening subnational and frontline capacity** is essential to effective border malaria response, as local health workers and authorities are best positioned to detect cases early and engage mobile and hard-to-reach populations.
- **Sustainable border malaria collaboration requires flexible and predictable financing,** including integration into domestic planning and budgets, alongside external funding models that reflect the cross-jurisdictional nature of border malaria.
- **Integrating malaria into broader health, surveillance, and border systems** enhances resilience, provided that structural weaknesses in health systems are simultaneously addressed.
- **Regional and neutral convening platforms play a critical enabling role,** offering trusted spaces for dialogue, coordination, and continuity where direct bilateral engagement is constrained by political, security, or capacity limitations.

Introduction

Border malaria remains one of the most persistent and complex threats to malaria elimination in Asia Pacific. The World Health Organization (WHO) defines border malaria as malaria transmission, or the potential for transmission, occurring across or along international land borders between countries where at least one country continues to experience malaria transmission.[1] Distinct from imported malaria cases detected within interior areas far from land borders or through sea borders, airports, or island countries, border malaria is driven by shared ecology, frequent population mobility, and sustained mixing of people, parasites, and vectors across porous borders. As countries make progress towards elimination, malaria cases often concentrate in border areas, making them a key frontier for last-mile elimination.

Addressing border malaria therefore depends on effective cross-border collaboration – defined as coordinated action between neighbouring countries and border jurisdictions to align surveillance, service delivery, information sharing, and response to shared malaria risks. WHO guidance and reviews have emphasized that border malaria is a complex and context-specific challenge that requires a clear definition of the problem through systematic situation analysis. This includes delineating where transmission is occurring, identifying affected and mobile populations, distinguishing relevant importation from other forms of case movement, and assessing ecological, epidemiological, health system, and political determinants sustaining transmission across borders.[1]

The latest WHO Prevention of Re-establishment guideline highlights that once a shared transmission focus is confirmed as a true cross-border problem, coordinated action becomes essential to achieve and sustain elimination.[2] In practice, such collaboration is constrained by informal population movement, fragmented and non-harmonized surveillance systems, delayed or asymmetric data sharing, political sensitivities, security restrictions, and and broader socioeconomic and resource limitations, including heavy reliance on external funding. These challenges limit the effectiveness of unilateral national approaches, underscoring the need for sustained, coordinated cross-border action to protect and advance elimination progress.

This policy brief draws on findings from a 2025 qualitative study conducted by the Mahidol Oxford Tropical Medicine Research Unit (MORU), in collaboration with the Asia Pacific Leaders Malaria Alliance (APLMA) and in consultation with the WHO Global Malaria Programme. The study involved key informant interviews with 29 national, subnational, regional, and international stakeholders engaged in border malaria prevention, surveillance, and cross-border collaboration across four Asia Pacific subregions (Figure 1). Interview findings were complemented by desk review and analyzed thematically to identify common challenges, enabling factors, and policy-relevant lessons. The recommendations presented in this brief are distilled from this process.

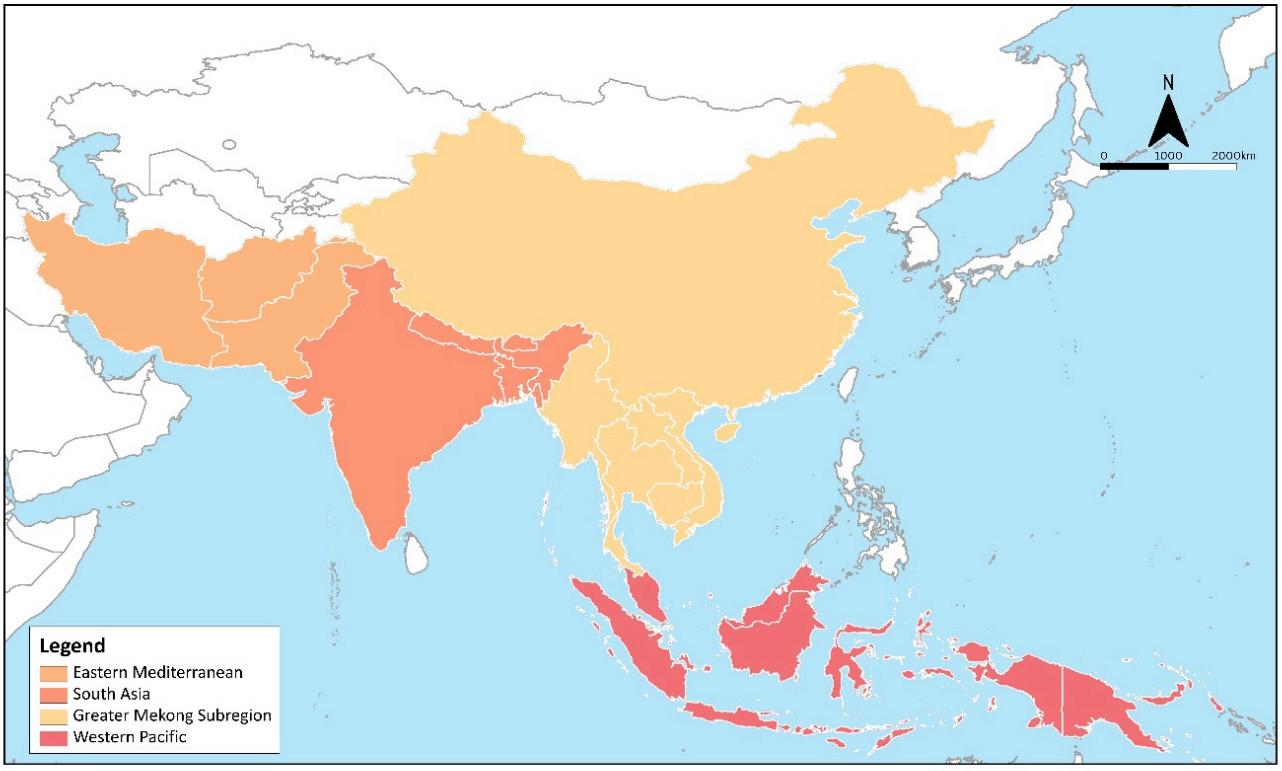

Figure 1. Map highlighting the four Asia Pacific subregions included in the study: Pakistan-Iran-Afghanistan (Eastern Mediterranean Subregion), India-Nepal-Bhutan-Bangladesh (South Asia), China-Cambodia-Lao PDR-Myanmar-Thailand-Viet Nam (Greater Mekong Subregion, GMS), Indonesia-Timor-Leste-Papua New Guinea (Western Pacific).

Policy Recommendations

1. Institutionalize cross-border collaboration beyond ad-hoc projects

Cross-border collaboration on malaria must be treated as a routine programmatic function, not an exceptional or temporary activity. Evidence from all four subregions shows that in many settings, border malaria coordination relies heavily on individual relationships between programme staff, non-governmental organization (NGO)-led workarounds, or short-term, project-based joint activities. While these approaches have often enabled pragmatic and rapid action, they remain vulnerable to disruption when personnel change, funding cycles end, or political priorities shift.

This fragility manifests differently across subregions but reflects a shared structural challenge. In the GMS, provincial- and district-level collaboration is frequently facilitated by implementing partners, with informal professional networks compensating for gaps in formal arrangements. In South Asia, operational information exchanges, such as the sharing of imported case details between neighbouring countries, often occur non-reciprocally through unofficial channels rather than institutionalized surveillance systems. In the Pacific, formal agreements such as memoranda of understanding (MoUs) and joint action plans exist, but their translation into routine, on-the-ground collaboration remains uneven. In the Eastern Mediterranean subregion (Pakistan, Iran and Afghanistan), malaria activities in border and hard-to-reach areas are commonly delivered through humanitarian coordination mechanism, reflecting ongoing security constraints but limiting long-term institutional and funding sustainability.

Taken together, these patterns point to clear policy and policy enforcement gaps. While informal, technical, and project-based arrangements have enabled collaboration to occur, they have not been sufficient to sustain it over time. Moving beyond episodic coordination requires deliberate institutionalization – embedding cross-border collaboration within governance structures, routine programme operations, and formal mandates where possible. At the same time, existing informal and technical mechanisms should be utilized as necessary entry points, particularly in complex or constrained border settings. Where feasible, these mechanisms should be leveraged through stepwise institutionalization, progressively anchoring successful practices within routine programming that provide continuity, legitimacy, and accountability.

To institutionalize cross-border collaboration, countries can prioritize the following actions:

- Integrate cross-border malaria coordination into routine programming, monitoring, and reporting cycles.
- Establish standing coordination mechanisms, such as task forces, joint committees, or designated units.
- Assign clear institutional roles and designated focal points on each side of the border, at both national and subnational levels.

2. Enable routine, reciprocal cross-border data sharing for malaria surveillance

Timely and reciprocal information exchange is more important than exhaustive or perfectly harmonized data systems. Across all four subregions, the ability to rapidly share information has proven critical for early detection, follow-up, and prevention of onward transmission. In practice, data sharing across borders is frequently fragmented and asymmetric.

In South Asia, routine cross-border data sharing is constrained by national data governance policies, leading frontline and subnational actors to rely on informal communication to alert counterparts of potential importation risks, often in a non-reciprocal manner. In the Western Pacific, while bilateral agreements and joint surveillance initiatives exist in some settings, their operationalization is inconsistent, and data sharing may be limited to periodic summaries rather than timely case-level information. In Eastern Mediterranean Subregion, ongoing security constraints, population displacement, and parallel humanitarian surveillance systems further complicate routine and reciprocal data exchange. In contrast, the GMS illustrates how cross-border data sharing can be achieved through fit-for-purpose mechanisms, such as real-time case reporting between Cambodia and Lao PDR, as well as cross-border malaria teams linking Lao PDR and Viet Nam. This success partly reflects neighbouring areas being at similar stages of elimination and surveillance capacity, particularly with case-based systems, unlike borders such as Pakistan–Iran, Bhutan–India, Nepal-India where differing transmission levels and surveillance strategies hinder reciprocal data exchange.

Enabling routine, reciprocal cross-border data sharing requires a pragmatic shift away from pursuing fully harmonized surveillance systems towards fit-for-purpose arrangements that prioritise speed, usability, and action. Across subregions, timely sharing of a small set of critical information has proven far more valuable for border response than delayed access to comprehensive datasets. Clear, shared expectations on what information should be exchanged, when it should be shared, and how it will be used are therefore more important than exhaustive data sharing arrangements.

To strengthen cross-border surveillance, countries can prioritize the following actions:

- Agree on a minimum dataset for cross-border sharing to support timely risk assessment and response.
- Adopt tiered or phased data-sharing arrangements that expand as trust and capacity grow.
- Coordinate the synergistic use of formal reporting channels and informal communication tools.

3. Strengthen subnational and frontline capacity for cross-border response

Those closest to the border are best placed to act, adapt, and respond. Frontline health workers, community health workers, and subnational health authorities operate at the interface of population mobility, service delivery, and surveillance, and are often the first to detect changes in transmission, respond to imported cases, and engage mobile or hard-to-reach populations. In border settings, these responses frequently require coordination not only within the health sector, but also with authorities responsible for migration, labour, border management, security and community governance. Effective border malaria response therefore hinges on strengthened capabilities of local systems and frontline actors to coordinate across sectors as the operational backbone of collaboration.

Across all four subregions, subnational and frontline actors already play a central role in managing border malaria by detecting and reporting imported cases that often bypass official entry points, thereby compensating for gaps in national-level coordination. In the GMS, village malaria workers and district teams are critical for case detection, follow-up, and engagement with mobile populations in border areas. In South Asia, subnational health staff frequently coordinate informally with counterparts across borders to track imported cases and support continuity of care. In the Western Pacific, frontline health workers and local systems underpin service delivery in remote and border communities, where access constraints require flexible, locally adapted responses. In the Eastern Mediterranean subregion, community-based approaches and trusted local actors are essential for reaching mobile and displaced populations in insecure border settings.

Moreover, technical capacity alone is insufficient without community engagement and trust. In border settings shaped by mobility, informality, and insecurity, trust between health workers and communities is a critical enabler of surveillance, treatment adherence, and prevention. Clear mandates for subnational engagement, designated coordination roles at border level, and sustained investment in trust-building with communities and non-health partners are therefore essential to translating local capacity into effective cross-border action.

To strengthen subnational and frontline capacity, countries can prioritize the following actions:

- Authorize province-to-province or district-to-district engagement for border malaria coordination.
- Designate subnational border focal points to facilitate timely engagement and response.
- Strengthen community engagement and trust-building approaches in border settings.

4. Secure flexible and sustainable financing for border malaria initiatives

Cross-border collaboration requires financing models that reflect its cross-jurisdictional nature. Border malaria activities sit at the intersection of national, subnational, and cross-border responsibilities, yet financing arrangements are often confined within administrative or programme boundaries. As a result, routine coordination, joint planning, and cross-border service delivery are frequently underfunded or treated as exceptional activities rather than core programme functions.

Across all four subregions, financing constraints emerged as a major barrier to sustaining border malaria collaboration. In the GMS, provincial and district authorities reported limited ability to fund routine cross-border coordination, joint meetings, or follow-up of imported cases because such activities fall outside existing domestic budget lines and are often supported only through time-bound partner projects. Furthermore, in some instances, border districts receive lower funding priority because they do not account for the highest share of national malaria burden, despite their disproportionate risk for cross-border transmission and re-introduction. In South Asia, cross-border collaboration, such as information exchange on imported cases, frequently relies on informal coordination between local officials, with little or no dedicated domestic financing to support systematic engagement or joint action. In the Western Pacific, border malaria activities have been heavily dependent on external funding, including for service delivery and surveillance in border and remote areas, raising concerns about sustainability as countries transition away from donor support. In Eastern Mediterranean subregion, malaria activities in border and hard-to-reach areas are often financed through humanitarian channels, which are variable and frequently short-term due to shifting programmatic and political priorities, reflecting security and access constraints.

Sustaining cross-border collaboration over the long term requires stronger domestic resource mobilization and greater integration of border malaria activities into national and subnational financing systems. In many settings, frontline and subnational actors who are central to border malaria response continue to operate without formal institutional mandates or dedicated budgetary support, limiting their ability to sustain routine coordination and joint action across borders. Embedding cross-border activities within routine planning, budgeting, and performance frameworks is therefore critical to ensuring continuity, national ownership, and long-term sustainability. Countries can also cost-share by jointly financing agreed cross-border activities.

At the same time, donor funding continues to play a critical enabling role in supporting border malaria initiatives, particularly in conflict-affected, humanitarian, and hard-to-reach border settings where domestic systems face capacity or access constraints. However, many donor funding models remain structured around single-country programmes and fixed administrative boundaries, limiting their ability to support routine cross-border coordination. To be effective, donor financing must better reflect the cross-jurisdictional nature of border malaria, allowing resources to be used flexibly across borders, administrative levels, and programme components.

To secure flexible and sustainable financing, countries can prioritize the following actions:

- Integrate cross-border collaboration of malaria activities into domestic planning and budget frameworks.
- Adapt financing mechanisms to allow resources to be used flexibly across administrative and programme boundaries.
- Engage donors to advocate for flexible financing arrangements for border malaria.

5. Integrate malaria into broader health and surveillance systems

Malaria collaboration is more sustainable when embedded within broader systems. Border malaria risks do not exist in isolation, but intersect with broader health security concerns, vector-borne disease (VBD) surveillance, population mobility, and emergency preparedness. Integrating malaria into wider health, surveillance, and border systems can help ensure continued attention, resources, and responsiveness, particularly in settings where malaria is no longer perceived as a high-priority disease.

Across subregions, malaria programmes have shown greater resilience where malaria functions are embedded within broader health, surveillance, and preparedness systems. In the GMS, malaria surveillance and response in near-elimination settings increasingly operate alongside other communicable disease and VBD platforms. In South Asia, integration with routine district health services and existing communicable disease surveillance structures has enabled continued detection and follow-up of cross-border cases, particularly where malaria-specific resources are limited. In the Western Pacific, malaria activities in border areas have often been delivered through broader primary health care and public health systems, supported by cross-country agreements that extend beyond malaria and enable more integration of workforce, logistics, and service delivery platforms across diseases.

At the same time, integration alone is insufficient if underlying structural weaknesses in local health systems are not addressed. In many border settings, health system performance is constrained by population mobility and migration, climate and ecological risk, socioeconomic vulnerability, and political or security conditions that disrupt access and surveillance. These structural drivers not only sustain malaria transmission but also undermine the effectiveness of integrated approaches. Strengthening local health systems and broader socioeconomic development in border areas, is therefore a prerequisite for meaningful integration, ensuring that malaria-related functions such as surveillance, diagnosis, treatment, and response remain effective within broader platforms.

To integrate malaria into broader systems, countries can prioritize the following actions:

- Align malaria with broader health, emergency preparedness, or national health security agendas.
- Embed malaria response into existing communicable disease, VBD, or health security platforms.
- Address structural weaknesses in local health systems at borders as part of integration efforts.

6. Strengthen regional and neutral convening platforms to support coordination

Trusted intermediaries are critical enablers of cross-border collaboration. In many border contexts across the Asia Pacific, direct bilateral engagement is constrained by political sensitivities, security considerations or uneven capacity. Regional and neutral convening platforms play an essential role in bridging these gaps by providing trusted spaces for dialogue, coordination and problem-solving, that would otherwise be difficult to sustain. Cross-country capacity-building and joint technical activities are also leveraged to promote harmonisation and alignment.

Experiences across the four subregions show that where regional or neutral platforms are active, cross-border collaboration is more likely to persist despite political change or operational challenges. In the GMS, regional platforms such as the WHO Mekong Malaria Elimination (MME) programme and Regional Artemisinin-resistance Initiative (RAI) have facilitated information exchange and joint planning among countries. In South Asia, neutral intermediaries such as WHO Regional office for South-East Asia (SEARO) have enabled cross-border dialogue and technical exchange where formal bilateral mechanisms are limited. In the Western Pacific, regional coordination platforms, such as Asia Pacific Leaders Malaria Alliance (APLMA), have supported collaboration across geographically dispersed and capacity-constrained settings, helping align surveillance, response, and service delivery. In the Eastern Mediterranean subregion, humanitarian and neutral platforms such as the Pakistan, Iran and Afghanistan Malaria Network (PIAM-Net) often serve as a neutral platform for coordination and information sharing in complex and insecure border environments, with WHO Regional office for the Eastern Mediterranean (EMRO) often leading coordination through this country-endorsed structure when direct country-led engagement is constrained.

Beyond convening, these intermediaries provide continuity, technical neutrality and institutional memory, sustaining collaboration despite political transitions or shifting priorities. They also help align national, subnational, and partner efforts, and reduce duplication. Importantly, multilateral and neutral platforms are well placed to elevate border malaria from a bilateral or localized operational issue to a shared regional concern, framing it within broader health security, resilience and preparedness agendas. This strengthens political commitment and creates opportunities to sustain attention and investment in border malaria.

To strengthen regional platforms, countries can prioritize the following actions:

- Actively engage in regional platforms as routine mechanisms for cross-border dialogue, coordination, and problem-solving rather than ad-hoc or project-based engagements.
- Use regional platforms to align national and subnational priorities, data, and approaches.
- Support the sustainability of regional convening functions through active engagement, political backing and financial contributions.

Conclusion

The wide-ranging stakeholder experiences from the four Asia Pacific subregions have shown that effective cross-border malaria collaboration cannot be built on a single model or prescribed formula. The diversity of border contexts demands adaptive, context-sensitive approaches that leverage local strengths, navigate political and operational constraints, and build on existing mechanisms of trust and coordination.

This policy brief has provided six overarching recommendations on cross-border collaboration, each grounded in evidence from multiple subregions and designed to be adapted to specific border contexts. Institutionalizing collaboration, enabling timely data sharing, empowering frontline actors, securing sustainable financing, integrating malaria into broader systems, and strengthening regional platforms are all essential components of a comprehensive approach to border malaria. However, their implementation must be tailored to local realities, recognizing that what works in one setting may require substantial adaptation in another.

As countries across Asia Pacific continue their progress towards malaria elimination, borders will remain a critical frontier. The recommendations presented here offer a roadmap for national programmes, development partners, and regional bodies to strengthen cross-border collaboration in ways that are pragmatic, sustainable, and responsive to the unique challenges of each border context. This adaptive, context-sensitive approach will be essential to protecting malaria gains, preventing re-establishment, and sustaining progress towards a malaria-free Asia Pacific.

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