Private Sector Business Case Studies in the Greater Mekong Subregion
Private Sector
Business Case Studies
in the Greater Mekong Subregion
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Cover photo: Chor Sokunthea/World Bank. Cambodian farmer gets her first harvest with her husband in Kampong Speu Province.

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The Malaria Elimination Initiative (MEI) at the University of California San Francisco (UCSF) Global Health Group believes a malaria-free world is possible within a generation. As a forward-thinking partner to malaria-eliminating countries and regions, the MEI generates evidence, develops new tools and approaches, disseminates experiences, and builds consensus to shrink the malaria map. With support from the MEI’s highly-skilled team, countries around the world are actively working to eliminate malaria – a goal that nearly 30 countries will achieve by 2020.

shrinkingthemalariamap.org
### Acronyms

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<tr>
<th>Acronym</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ABC</td>
<td>ASEAN Business Club</td>
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<tr>
<td>ACT</td>
<td>Artemisinin combination therapy</td>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<td>AFTA</td>
<td>ASEAN Free Trade Area</td>
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<td>APEC</td>
<td>Asia-Pacific Economic Cooperation</td>
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<td>APLMA</td>
<td>Asia Pacific Leaders Malaria Alliance</td>
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<tr>
<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<tr>
<td>ASEANTA</td>
<td>ASEAN Tourism Association</td>
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<tr>
<td>BCC</td>
<td>Behavior change communication</td>
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<tr>
<td>BIMSTEC</td>
<td>Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation</td>
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<tr>
<td>CSO</td>
<td>Civil society organization</td>
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<tr>
<td>CSR</td>
<td>Corporate social responsibility</td>
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<tr>
<td>FDI</td>
<td>Foreign direct investment</td>
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<tr>
<td>Global Fund</td>
<td>The Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<tr>
<td>GMS</td>
<td>Greater Mekong Subregion</td>
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<tr>
<td>GPARC</td>
<td>Global Plan for Artemisinin Resistance Containment</td>
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<tr>
<td>GTS</td>
<td>Global Technical Strategy for Malaria</td>
</tr>
<tr>
<td>HIA</td>
<td>Health impact assessment</td>
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<tr>
<td>IEC</td>
<td>Information, education and communication</td>
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<tr>
<td>IRS</td>
<td>Indoor residual spraying</td>
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<tr>
<td>Lao PDR</td>
<td>Lao People's Democratic Republic</td>
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<tr>
<td>LLIN</td>
<td>Long-lasting insecticidal net</td>
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<tr>
<td>MBI</td>
<td>Mekong Business Initiative</td>
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<tr>
<td>MMP</td>
<td>Mobile migrant population</td>
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<tr>
<td>NCD</td>
<td>Non-communicable disease</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<tr>
<td>PNG</td>
<td>Papua New Guinea</td>
</tr>
<tr>
<td>PPP</td>
<td>Public-private partnership</td>
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<tr>
<td>RAI</td>
<td>Regional Artemisinin-resistance Initiative</td>
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<tr>
<td>RAM</td>
<td>Rotarians Against Malaria</td>
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<tr>
<td>RCEP</td>
<td>Regional Comprehensive Economic Partnership</td>
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<tr>
<td>RDT</td>
<td>Rapid diagnostic test</td>
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<tr>
<td>ROI</td>
<td>Return on investment</td>
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<td>SARS</td>
<td>Severe acute respiratory syndrome</td>
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<td>SSB</td>
<td>Social Security Board</td>
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<td>SEAR</td>
<td>WHO South-East Asia Region</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>WPR</td>
<td>WHO Western Pacific Region</td>
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</table>
Definition of Terms

Private Sector: Various definitions exist for the private sector, including those by United Nations organizations. In this report, the private sector is defined as:

- For-profit entities – commercial companies or businesses regardless of size, ownership and structure;
- Non-profit entities – not-for-profit social enterprises, non-governmental organizations, philanthropic entities;
- Business, industry and trade associations;
- Private financial institutions; and
- High-net-worth individuals and the general public.

Public-Private Partnerships: Any explicit joint program or project that involves collaboration between the public and private sectors to provide services. These include contracting between the public sector (either governments or development agencies) and the private sector (including private sector providers of commodities).

Public Sector: National, provincial/state/regional and district/local governments, municipal administrators, local government institutions, all other government and inter-governmental agencies.

Return on Investment: Measure used to evaluate the efficiency of an investment or to indicate how much benefit (“return”) is derived from a program in relation to its cost.

Executive Summary

The Asia Pacific region aims to eliminate malaria by 2030. With around 15.6 million cases and 27,700 deaths in 2015, the region has the highest malaria burden outside of Sub-Saharan Africa. In particular, the Greater Mekong Subregion (GMS) bears a heavy malaria burden and is also seeing the emergence of resistance to frontline malaria medicines such as artemisinin and its partner drugs such as piperaquine. The rise and spread of drug resistant malaria threatens to undermine the gains made to date against the disease. An estimated 22 million treatment failures, 230,000 additional severe malaria cases and 116,000 excess deaths could annually occur around the world due to drug resistance.

Eliminating malaria has been recommended as the most effective approach to tackle the spread of drug resistance. Such an endeavor is costlier than controlling malaria, as enhanced surveillance is needed to detect, report and treat every single infection to prevent onward transmission of malaria. A study commissioned by the World Health Organization calculates that the cost of malaria elimination in the GMS will cost more than US$3 billion between 2015 and 2030. Regional countries are increasing domestic financing to meet their health needs including malaria. However, a significant gap in financing remains, with a steady decline in donor financing compounding the challenge.

In this context, mobilizing the private sector’s considerable resources and networks will be needed if the region is to realize its malaria elimination goal. Leveraging the expertise and resources of the private sector, in partnership with the public sector, presents an optimal approach to confront the issue at hand. As such, there is a need to understand the perspectives of the private sector on becoming involved in the malaria elimination effort, and to craft mutually beneficial approaches to promote and maintain such involvement.

Investing in malaria elimination has wider implications for health security of the communities in the GMS. Strengthened health systems will be better able to respond to the health needs of the communities and be an important cornerstone of universal health coverage, while a robust surveillance system will be a crucial tool against emerging and re-emerging infectious diseases.

Study synopsis

The main objective of the report is to conduct case studies in relevant business sectors in the GMS and develop business cases for private sector investments in malaria.

Specific objectives are to:

a. Identify and investigate examples of private sector investments (and perceptions towards such investments) in malaria and identify best practices;

b. Develop business cases for private sector investment in malaria in the GMS;

c. Cross analyze the findings for the GMS with information garnered in the business cases for Bangladesh, Indonesia and Papua New Guinea (PNG);

d. Provide recommendations on private sector contribution to malaria in the Asia Pacific region.

This report is intended to garner private sector perspectives on malaria elimination, and the motivators, enablers and incentives regarding private sector investment in malaria and their participation in public-private partnerships (PPPs).

The sector selection process was made based on background research conducted on the GMS countries and the three countries identified for the separate but related Private Sector Business Case Studies in Bangladesh, Indonesia and Papua New Guinea. Three main business sectors, the agriculture and agro-businesses (plantations), oil and gas, and the travel and tourism sectors were identified as the focus sectors.

A total of 45 interviews with business operators and key informants were conducted by email, phone and in-person between August and December 2016.

Findings

Malaria along with dengue were identified as major health concerns. Respondents across the four countries also reported that malaria cases are low and declining. There is a general lack of awareness on the threat of malaria, including misinformation on the causes of malaria. Most respondents perceived dengue as a bigger threat to their health and that of the employees, their communities and their productivity. The respondents reported experiencing a surge in cases in their communities that affected both children and adults, and having employees taken ill by dengue. Companies interviewed were generally receptive of involvement in malaria elimination efforts – 66.7%
reported being eager to collaborate while 15.4% were already doing so.1 Most private sector respondents reported that they would like the government to take the lead in malaria elimination efforts. They also indicated that the government can promote private sector buy-in by presenting concrete actions and plans that the private sector can get involved in.

Large-scale plantations that were approached or interviewed were not receptive to interview process, nor were they forthcoming in disclosing information. A reason for the lack of participation from the plantation sector is the level of unskilled workers who form the majority of the plantation workforce, including internal and cross-border migrant workers. This worker population is mainly seasonal and rarely live on-site, often living with their relatives in nearby communities. Most plantation sector respondents reported that the productivity for plantations is also not affected by the health of unskilled seasonal workers, as such workers are easily replaceable. Skilled workers are mostly permanent staff in plantations. Companies are more sensitive to the productivity of skilled workers and are thus more willing to invest in their health and welfare.

Due to the decline of both malaria cases and the price of oil and gas, along with the changing health landscape of the local communities, oil and gas companies are reprioritizing towards non-communicable diseases (NCDs) and non-health related corporate social responsibility (CSR) activities. The tourism sector in the GMS lacked awareness on the threat of malaria and also on the possible ways in which it can contribute. Businesses that were interviewed were receptive to getting involved, although stated that malaria is not actively discussed in the tourism sector and its annual meetings.

Business associations represent an opportunity to reach out to a wider and diverse number of businesses. Some business associations in Myanmar, Thailand and Cambodia have been engaged in health programs, including malaria control activities. However, these associations are reprioritizing their focus and moving away from malaria and communicable diseases to NCDs, or from health issues all together. The reasons for reprioritization include a decline in malaria cases, lack of funding and declining commodity prices especially with the palm oil and rubber plantation associations.

Migrant workers in the GMS number between 3–5 million workers, with Thailand hosting around 60% of the migrant population. Mobile migrant populations (MMPs) occupy a key position in the GMS’s efforts to eliminate malaria. They utilize both official and unofficial checkpoints in crossing national borders, presenting challenges in tracking their movements. In addition, data on MMPs are difficult to compile, including their health history. Legal migrant workers have access to medical services but illegal migrant populations face more difficulty in doing so. Border police, military personnel and local communities have sometimes been overlooked by malaria intervention programs but are vulnerable to malaria. In certain areas, MMPs easily obtain bednets while local communities face stock outs.

Access to health services and out-of-pocket expenditures are the main barriers for the workers. In Cambodia, a number of NGOs working with plantations have started to provide integrated services including long-lasting insecticidal net (LLIN) distribution, malaria test and treatment services, together with training on HIV prevention, condom use, and for diarrhea. The plantations, in collaboration with government health centers, invite health staff to do regular checks on workers and provide free immunization services.

Productivity is the most frequently stated motivator for companies to invest in health. However, the productivity is selective for skilled workers, as unskilled workers are seen as transient and easier to replace. The absence of skilled workers is seen as having a major impact on productivity. Charity was also described as a motivator in certain cases. Respondents identified a number of enabling factors that the public sector can use to spur private sector involvement in malaria. The most common enabler was the government (both local and national) providing clear instructions on where the private sector can contribute. In addition, relevant information on the challenges at hand would enable the private sector to identify solutions and resources needed. Respondents identified tax incentives and recognition awards as viable incentives to promote private sector involvement in malaria elimination. Most businesses interviewed did not measure their return on investment (ROI) in health in financial terms. Some companies reported that they used employee productivity to measure their ROI in health.

The recent resurgence of dengue has placed it higher on the agenda of both the public and private sectors, threatening to divert resources from malaria elimination efforts. Although the private sector has been engaged in CSR programs for malaria activities, the private sector in general is reprioritizing its resources to non-health activities. The oil and gas sector and plantation sector businesses have been losing interest in malaria due to the decline in recent global commodity prices. The slump in commodity prices has decreased resources available for CSR activities. In addition, the decline in malaria burden in project sites, private sector sponsored clinics and surrounding communities have rendered the disease invisible at the project operation and corporate leadership levels, prompting companies to redirect their CSR budgets and subsequent activities to other programs.

1 Out of 39 businesses interviewed, 26 were eager and six were already involved in malaria interventions.
Ethnic groups play significant roles in certain areas of the GMS, and their collaboration is needed in addition to the public and private sectors to conduct malaria elimination activities. In many border areas in the GMS, the local inhabitants speak different languages or dialects from the country’s main or official languages, presenting challenges in conveying health information, and collecting data on patient history and barriers to healthcare access.

Cross-sectoral analysis

Sectoral analysis for this report was done in juxtaposition with the analysis done for the Business Cases in Bangladesh, Indonesia and Papua New Guinea.

Awareness is high for malaria and other vector-borne diseases across the GMS countries, which is also seen in the three case study countries. Plantation owners are more sensitive to the health situation of skilled labor and are more willing to invest in their health and welfare, as skilled workers are harder to replace and have greater effect on productivity. Cross-border MMPs play a much more prominent role in the GMS plantation sector, and are also a major category for malaria implementation partners to focus on.

In the past, the oil and gas sector was a very strong partner for engagement in malaria control and prevention activities. However, due to economic downturn (including a decline in oil and gas prices) and declining malaria cases, this traditional partner has become the least receptive sector for further engagement across the GMS, Indonesia and PNG. They are also reprioritizing their current health interventions towards NCDs and non-health issues such as women’s empowerment and income generation activities. Oil and gas companies also perceive health as not falling under the purview of their core businesses.

Across the GMS and the case study countries, the tourism sector is the least aware yet the most willing sector for cooperation on malaria elimination. Tourism associations are crucial platforms to engage with relevant tourism authorities and stakeholders, as they have the capacity to influence a larger number of businesses and to set industry standards and norms. Malaria and other vector-borne diseases are seen as directly affecting their core business.

The private sector in both the GMS countries and the three case study countries stated that they wanted the public sector to lead any malaria elimination effort. They also wanted the government to provide guidelines and compliance checklists for the private sector. Respondents generally saw malaria as a health challenge, but many perceived dengue as a more pressing health issue. Similar incentives were suggested by the respondents, such as tax breaks, tax incentives and recognition awards.

Recommendations

Based on the findings, we provide recommendations to the public sector, development banks and partners, and regional entities to promote, maintain, expand and re-energize private sector partners and their investments in malaria, particularly within a regional health security framework and in supporting resilient health systems through integrated health services.

The public sector can provide tax relief and tax credit and non-monetary incentives such as recognition awards from relevant ministries. Extending the social licensing timeframe for companies involved in malaria and other health activities, can aid with longer-term planning processes for CSR related activities. Providing national regulatory framework will provide clear guidelines for private sector companies to engage in health-related activities.

The public sector can also mandate companies to undertake health checks for workers, streamline access to healthcare for communities in malaria endemic areas and remove barriers for MMPs. It can also promote PPPs, including linking up the private sector to sources of innovative solutions. PPPs that leverage the resources, networks and expertise of both the public sector and private sectors presents the best approach to maximize the impact of limited resources.

Multilateral development banks and their partners can establish closer linkages with chambers of commerce and trade unions, influence the development of standard operating procedures and provide specific checklists of activities for business compliance. Development banks and partners can support programs that encourage and equip the private sector to measure investments in financial terms. They can formulate a regulatory framework that requires companies to conduct health impact assessments, systematically address the assessment of outcomes and set aside a certain amount for CSR/malaria activities. They can also confer recognition of companies’ contributions through awards, special mentions and acknowledgements. Multilateral development banks and partners can also provide innovative financing options to those companies that are development oriented and willing to consider services or infrastructure for health.

Regional entities (e.g., Asia Pacific Leaders Malaria Alliance, Association of Southeast Asian Nations [ASEAN] etc.) can establish closer linkages with platforms that represent businesses and workers, such as chambers of commerce and trade unions respectively. They can leverage corporations and industry associations, and also confer recognition awards which can be tiered based on a points system to acknowledge companies’ contribution to malaria elimination. Regional entities can also promote the involvement of regional private sector networks, including...
re-engaging business coalitions, and reaching out to foundations as well as other new regional partners. Finally, the ASEAN and its component organizations can be engaged to increase regional momentum against malaria.
1. Introduction

This report covers issues related to the development of business cases for private sector investment in malaria based on the analysis of private sector perspectives and investments in malaria activities in three sectors across the Greater Mekong Subregion (GMS).

1.1 Scope and objectives

The report aims to develop business cases for private sector investments in malaria drawn from private sector perspectives on malaria elimination and other relevant stakeholders engaged in public-private partnerships (PPPs). The report’s context is the Asia Pacific region’s goal to eliminate malaria by 2030, and the need to address the emergence of drug-resistant malaria in the GMS.

The specific objectives of the report are to:

a. Identify and investigate examples of private sector investments (and perceptions towards such investments) in malaria and identify best practices;

b. Develop business cases for private sector investment in malaria in the GMS;

c. Cross-analyze the findings for the GMS with information garnered in the business cases for Bangladesh, Indonesia and Papua New Guinea (PNG); and

d. Provide recommendations on private sector contribution to malaria in the Asia Pacific region.

The report draws on literature reviews, document and Internet-based research, and interviews with private sector partners in the identified countries to determine the main motivators, enablers and incentives for private sector investment in malaria elimination.

1.2 Rationale

The rationale for the report is that the private sector has an important role to play in the Asia Pacific region’s efforts to eliminate malaria by 2030. The role is set to be greater in the GMS, where urgent efforts are needed to address the rise of artemisinin-resistant malaria through elimination. More resources will be required to eliminate malaria, which in part will be met by increased domestic financing by many governments within the region. However, other approaches and new partnerships will be needed to realize the elimination goal. Multilateral development banks including Asian Development Bank (ADB), regional entities, such as Asia Pacific Leaders Malaria Alliance (APLMA), and other bodies are looking to engage the private sector as an important partner in regional malaria elimination effort.

The private sector can play a major role in malaria and broader health systems strengthening and security, including surveillance, procurement of medical services, distribution of resources, and provision of innovative solutions (e.g., technology transfer, supply chain management, and commodities delivery). Public-private and private-private partnerships are crucial in delivering malaria interventions, developing new products (e.g., Medicines for Malaria Venture) and mobilizing resources for malaria elimination.

As such, there is a need to better understand the private sector’s perspectives on malaria and malaria elimination, expectations around their involvement, and the underlying factors driving, enabling, motivating or hampering private sector investment in malaria elimination. There is also a need to understand the various approaches where the private sector can be a partner for malaria elimination.

1.3 Methodology

The paper draws on literature reviews, document and Internet-based research, and interviews with private sector partners in the identified countries to determine the main motivators, enablers and incentives for private sector investment in malaria elimination efforts.

Sector selection

The sector selection process was made based on background research conducted on the GMS countries and the three countries identified for the separate but related Private Sector Business Case Studies in Bangladesh, Indonesia and Papua New Guinea. Three business sectors that are promising for private sector investment in malaria were identified. Sector selection was based on the following criteria:

Inclusion criteria:

1. Private sector activities and operations in remote, high malaria transmission areas
2. Malaria exposure risk of employees/target population
3. Private sector productivity is directly impacted by malaria incidence
4. Size of contribution to the national economy
5. Size of the labor force involved in the sector
6. Present across the GMS and the three countries
Exclusion criteria:
1. Private sector operations where access is an issue
2. Political economy and sensitivity of certain industrial sectors

Sector selection:
1. Agriculture/agro-business (plantations)
2. Oil and gas
3. Travel and tourism

These sectors (and their subsectors, particularly in agriculture/agro-business) are common across the GMS and Bangladesh, Indonesia and PNG. Based on the snowball and purposive sampling approaches, the interviews covered a range of stakeholders from small to large plantations, small and large hotels including chain hotels in the tourism sector, airlines, oil and gas companies as well as relevant associations (e.g., hotel and tourism associations, airline and business associations) and key informants.

Interviews
Relevant stakeholders and interviewees were identified for the interviews. Interviews were conducted by email, phone or in-person between August and November 2016.

A total of 45 interviews were made, comprising 39 stakeholders (two airlines, 18 hotels, two tourism companies, two oil and gas companies and 15 plantations) and six key informants from various associations. Face-to-face interviews were conducted per country relying on a standard set of interview questions specifically developed for each of the abovementioned sectors.

Interviewees were selected based on referrals provided by the Malaria Elimination Initiative of the University of California, San Francisco Global Health Group and through chain referrals from other networks and relevant partners. A preliminary interview list is attached as Annex 1.

Snowball sampling (or chain referral sampling) and purposive approaches were used for the study. Snowball sampling is a sampling method used by researchers to identify subjects by asking other subjects to nominate persons to be interviewed. This method is particularly useful for target populations that are difficult to reach. The main value of snowball sampling is in obtaining a small number of linked respondents or where some degree of trust is required for initial contact. Snowball sampling approach can build on emerging themes for analysis. It is found to be economical, efficient and effective in order to produce in-depth results. Purposive sampling is used in qualitative research for the identification and selection of information-heavy cases for the most effective use of limited resources (i.e., time and human resources).

An interview guide was developed, and a standard questionnaire written in English for each of the three sectors was used for the interview process. The interviewers were briefed to minimize biases and to orient the interviewers on the topic of malaria elimination and the roles played by the private sector. The responses from the interviews were compiled and a code list was constructed. Once the interview data were entered into ATLAS.ti and the text coded, similar codes were sorted and analyzed together to determine common themes that emerged from the data.

Limitations
Businesses were approached through both interlocutors and through cold calling and email requests (done for companies based in Lao People’s Democratic Republic [Lao PDR], Thailand and Viet Nam).

A majority of businesses that were cold-called or emailed did not respond to initial requests, while a handful agreed to participate but did not respond afterwards. Language barriers were a major issue in all countries except Myanmar. It hampered the search and outreach efforts for relevant stakeholders for the interview process. Members of malaria and health-specific civil society organizations translated the interviews, but had certain difficulties in translating the questions and responses.

Due to time constraints, the remaining countries in the GMS – Viet Nam and China (Yunnan Province and Guangxi Zhuang Autonomous Region) were not included in the report. Businesses based in Viet Nam were contacted through email, but none responded.

Snowball sampling may not generate a group of interviewees that is fully representative of the target population. Purposive sampling poses the risk of bias and over-representation. Data collection was also dependent on different teams conducting the interviews across the four countries. While the questionnaire was standardized, there may be differences in interviewer approaches and interviewee responses to the questions posed. In addition, the responses may vary across interviews conducted face-to-face, through email and by phone.

Given the scope and geographic scale of the paper, the study was limited by time constraints, access to key stakeholders and distance to sites in the three countries. Certain plantations were remote and distant, particularly locations at or near border areas. Companies were also

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3 Ibid., p. 3.

wary that studies and interviews might intrude and reveal information which they consider as trade secrets or sensitive information.

1.4 Report structure
The report comprises the following sections: Section 1 covers issues related to the development of business cases for private sector investment in malaria based on the analysis of private sector perspectives and investments in malaria activities in three sectors across the Greater Mekong Subregion. Section 2 introduces the context to the challenge at hand – why malaria elimination is a priority issue for the GMS and the wider Asia Pacific region, and the crucial role of private sector to realize this goal. Section 3 provides the background of the GMS including the economic landscape, the background on the three sectors and the health landscape. It also explores the role of mobile migrant populations (MMPs). Section 4 lists the major findings regarding private sector perspectives on investing in malaria elimination. Section 5 provides cross-sectoral analyses between the GMS countries and the three case study countries. Section 6 provides recommendations based on the findings and analyses. Section 7 concludes the paper and re-emphasizes the findings and recommendations of the paper. The report is supported by two annexes. Annex 1 is the list of interviewees in Cambodia, Lao PDR, Myanmar and Thailand. Annex 2 contains the interview guidelines and questionnaires sent to the three sectors.
2. Malaria Elimination and the Private Sector

2.1 Malaria background

In the Asia Pacific region, malaria is endemic in 20 countries with around 2.14 billion people at risk, including 269 million people living in high-transmission areas. It has the highest malaria burden outside of Sub-Saharan Africa, which bears the bulk of the global malaria burden. In 2015, the WHO reported around 15.6 million cases, including 5.6 million cases due to *Plasmodium vivax* and 27,700 malaria-related deaths. The WHO South-East Asia Region (SEAR) accounted for 7% of global malaria cases and 6% of estimated global malaria deaths – 14.4 million cases and 26,200 deaths. In the WHO Western Pacific Region (WPR), 1.2 million cases and 1,500 malaria deaths were reported, with PNG accounting for 77% of all reported confirmed cases. The main malaria parasite in both regions is *P. falciparum*. *P. vivax* accounted for 34% of cases and 7% of deaths in SEAR, and 58% of cases and 17% of deaths in WPR. India, in SEAR, accounted for 49% of global *P. vivax* malaria cases and 51% of global *P. vivax* malaria deaths in 2015.

The GMS, traversing both SEAR and WPR, carries a heavy malaria burden and is the historical and current hotspot for the emergence of drug-resistant malaria. In 2015, 152.3 million people were at risk of malaria (64% of the population), with around 30 million (12.6%) at high risk. According to the World Malaria Report 2016, the GMS countries had 181,835 confirmed cases of malaria and 85 confirmed deaths.

2.2 Changing economic and health landscapes

The GMS and the wider Asia Pacific region have enjoyed overall economic growth since the end of the Cold War. Despite recent tempering, real gross domestic product (GDP) growth in developing regional countries such as China, India and member states of the Association of Southeast Asian Nations (ASEAN) is expected to be around 6.2% for 2016–2020. The region now generates two-fifths of the global GDP (in terms of purchasing power parity), with China, India and Japan accounting for 70% of the region’s output. This growth is primarily driven by factor accumulation (i.e. increases in the labor force and the capital stock through investment) along with significant increases in productivity. In addition, economic liberalization the growth and success of the private sector, fueled the region’s economic growth.

Great disparity remains among regional countries – Japan, South Korea, Hong Kong and Singapore score “very high” in terms of the human development index while countries such as Myanmar and PNG have “low” human development. As of May 2016, twelve countries in the Asia Pacific – Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, Lao PDR, Myanmar, Nepal, the Solomon Islands, Timor-Leste, Tuvalu and Vanuatu – were classified as least developed countries by the United Nations. However, regional initiatives such as the ADB’s GMS Economic Cooperation Program and the Initiative for ASEAN Integration aim to narrow the development gap.

The economic development has brought about major gains in health. Between 1970 and 2010, life expectancies increased by more than 15 years, while child mortality fell by two thirds. Health transitions are also occurring as countries move up the income ladder – non-communicable diseases (NCDs) now account for 60% of deaths in Southeast Asia. Increased interconnectivity and air travel has led to the rise of medical tourism within the Asia Pacific region, and also the challenge of emerging and re-emerging infectious diseases spreading quickly across a wide area. Over the years, the region has already witnessed major epidemics such as Severe acute respiratory syndrome (SARS), H5N1 (“avian flu”) and H1N1 (“swine flu”) influenza and Middle East respiratory syndrome coronavirus.

The Asia Pacific region’s economic growth, along with the changing donor landscape present a mixed scenario for the countries concerning malaria elimination. Rising wealth and donor reprioritizations mean that the region will receive less external assistance in the future to address health challenges. As a result, more resources will be required not only from governments, but also from

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5 Ibid., pp. 80–83.
6 Ibid., p.40.
7 Ibid.
8 Ibid.
10 Does not include Yunnan Province and Guangxi Zhuang Autonomous Region of China. According to the World Malaria Report 2016, around 33,000 people in China lived in active foci.
11 Does not include 3,116 reported malaria cases and 0 confirmed deaths in China.

13 The Human Development Index is calculated based on life expectancy at birth, the mean years of schooling, the expected years of schooling, and the Gross National income at purchasing power parity. Ref: United Nations Development Programme, Human Development Reports, (http://hdr.undp.org/en/content/human-development-index-hdi), accessed 10 February 2017.
philanthropic organizations, the private sector and local communities in order to mobilize additional domestic resources.

2.3 Malaria elimination: A regional priority
Malaria is currently on the decline, but cases resistant to artemisinin combination therapy (ACT) – the frontline medicines deployed against malaria – is emerging across the GMS. Such developments threaten to reverse the hard earned gains made against malaria not only in the Asia Pacific region, but in other malaria endemic regions, including Sub-Saharan Africa which bears the brunt of the global malaria burden. Drug resistance could lead to 22 million treatment failures and cause 230,000 additional severe malaria cases and 116,000 excess deaths annually around the world. In the Asia Pacific region, artemisinin resistance could potentially cost US$3.5 million in excess cost and US$51 million in productivity losses.\(^{15}\)

The Global Plan for Artemisinin Resistance Containment (GPARC) recommended malaria control and elimination to stop the spread of drug-resistant parasites.\(^{16}\) In September 2014, the Malaria Policy Advisory Committee of the WHO reviewed the situation through a malaria elimination feasibility study and recommended that the GMS adopt the goal of eliminating \(P. falciparum\) malaria in the GMS by 2030 in order to counter the threat of multidrug resistant malaria. In 2015, the WHO published the Global Technical Strategy for Malaria 2016–2030 (GTS) and the subsequent Strategy for Malaria Elimination in the Greater Mekong Subregion (2015–2030), which was developed based on the GTS.

In line with this recommendation, there is momentum in support of malaria elimination in order to address the emergence and spread of artemisinin and multidrug-resistant malaria in the GMS.\(^{17,18}\) APLMA was formed in November 2013 to accelerate progress against malaria and to eliminate it by 2030. The elimination goal is also in line with the United Nations’ Sustainable Development Goal 3, which calls for the elimination of malaria and other major epidemics by 2030, and the WHO’s goal of reducing global malaria incidence and mortality by 90% by 2030.

2.4 Malaria and health security
As a major infectious disease, malaria occupies an important node in the global health security landscape. Eliminating malaria while the available medicines are effective is crucial to tackling multidrug resistant malaria as found along the Thai-Cambodian border. The alternative would be a massive reversal of the gains made.

Investing in malaria elimination has direct positive contributions to health security of the countries and communities involved. The expansion of malaria interventions can be used as an entry point for strengthening health systems, including maternal and child health services and laboratory services, and to build stronger health information and disease surveillance systems.\(^{19}\)

Strengthening malaria-endemic countries’ surveillance systems – such as a network of malaria volunteers and workers – for elimination also improves the capacity to detect and report disease outbreaks, respond faster to public health emergencies, and also cross-border collaboration.\(^{20}\) Vector control efforts, along with behavior change communication (BCC) and information, education and communication (IEC) activities will have positive impacts not only for malaria but other vector-borne diseases such as dengue fever, which has seen a major resurgence across the Asia Pacific region.

The efforts to ban the use of oral artemisinin monotherapies and to ensure access to quality medicines will also raise the standard of the food and drug monitoring agencies. The supply chains developed and streamlined for malaria elimination will be able to better deliver other medicines and commodities such as vaccines and nutrition supplements. Furthermore, ensuring vulnerable and remote communities have access to health centers will have health dividends beyond malaria, such as in reproductive and neonatal health, other infectious diseases, and the provision of primary healthcare. And finally, the strengthened health system will be able to better deliver universal health coverage, and the funds no longer needed for malaria can be redirected to tackle other pressing health challenges.

2.5 The role of the private sector
According to a feasibility study produced for the WHO in September 2014, the cost of malaria elimination in the GMS between 2015 and 2030 will be more than US$3 billion. In 2014–2015, the Asia Pacific region received US$309 million from various sources, representing 10% of global malaria-specific funding.\(^{21}\) However, both the SEAR and WPR have seen a decline in malaria funding from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) since 2010.\(^{22}\)

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18 APLMA, 9 April 2015. “Widespread artemisinin resistance could wipe out a decade of malaria investment.”
22 Ibid., pp. 81–83.
While GMS countries are increasing domestic financing for their health systems, there still is a large gap in resource needs. Eliminating malaria is costlier than controlling malaria; surveillance needs to be greatly enhanced in order to detect, report and treat every infection to prevent onward transmission of malaria. More precise data will be needed to track malaria to the last case, usually in remote areas.

The private sector – which includes corporations, small and medium enterprises and private healthcare providers – has considerable resources and networks at their disposal, which are already being tapped into for health interventions, including malaria elimination. Examples of private sector solutions to major health challenges include:

- **Insurance technology:** AIA Group and Nanyang Technology University have established an innovation center in Singapore to make insurance more accessible and to better manage issues around rising healthcare costs and improving patient outcomes by leveraging technology, big data and analytics.
- **Technology transfer:** After developing technology to produce mosquito nets with built-in insecticide, Sumitomo Chemical transferred the technology to stimulate local production and distribution of the nets, which also contributed to sustainable local employment and economic development.
- **Drug development:** Fujifilm collaborated with the French government to test the effectiveness of an influenza medicine produced by an acquired subsidiary as a potential stop gap drug against Ebola during the West African Ebola outbreak. The company also worked to make the medicine available to infected patients in Guinea.
- **Supply chain management:** In 2016, NEC Corporation joined a pandemic supply chain management scheme by the World Food Programme.
- **Drone delivery:** AeroSense, a drone joint venture company between Sony Mobile and Japanese robotics company ZMP, is exploring a partnership with the government of Zambia to begin using drones to deliver medicines and samples to hard-to-reach rural communities.
- **Commodities delivery:** Coca Cola collaborates with non-governmental organizations (NGOs) in hard-to-reach areas to distribute condoms and educational materials for HIV/AIDS and bednets and medicines for malaria using the company’s delivery networks throughout Africa.

PPPs that leverage the resources, networks and expertise of both the public sector and private sectors presents the best approach to maximize the impact of limited resources in order to address the threat of drug resistance and achieve the goal of eliminating malaria within the Asia Pacific region by 2030.

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3. Greater Mekong Subregion

3.1 Subregion background

The GMS (Figure 1) comprises countries and regions located within the drainage area of the Mekong river, namely: Cambodia, China (specifically, Yunnan Province and Guangxi Zhuang Autonomous Region), Lao PDR, Myanmar, Thailand and Viet Nam. It has an area of 2.6 million square kilometers and have a combined population of approximately 326 million. The region has a combined GDP of US$1.164 trillion (around US$2.9 trillion at purchasing power parity), with per capita GDP of around US$3,100 (US$7,750 at purchasing power parity). In 2015, the region had an average growth rate of 6.7%.

The GMS is a confluence of various regional platforms. Apart from Yunnan and Guangxi, the five countries are all members of the ASEAN. Regional economic cooperation platforms also overlap across the GMS – e.g., the ASEAN Free Trade Area (AFTA), the Asia-Pacific Economic Cooperation (APEC), the Regional Comprehensive Economic Partnership (RCEP), Mekong-Ganga Cooperation (MGC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). In terms of health platforms, the GMS straddles two WHO regions: SEAR (Myanmar and Thailand) and the WPR (Cambodia, Lao PDR, Viet Nam and China).

Located at the intersection of South, Southeast and East Asia, the GMS is very diverse in terms of biodiversity, landscape, ethnicity and linguistics. The subregion is recognized as one of the world’s top five threatened biodiversity hotspots, while the Mekong river is estimated to provide around 2.6 million tons of fish annually, accounting for around a quarter of the global freshwater fish catch. There are important commonalities in social and economic development and extensive population mobility within and across national borders. Significant areas of the GMS, particularly along the international borders, are inhabited by sizeable ethnic minorities. Some of these areas are conflict-affected zones, which contribute to irregular internal and trans-border migration.

3.2. Economic background

Subregional overview

The GMS countries are at various stages of economic development – Thailand, Guangxi and Yunnan have GDP per capita ranging from US$5,662–4,187 while the other countries had GDP per capita ranging from US$2,164–1,227. The region experienced an average GDP growth rate of 6.5% over the past five years (Figure 2).

Member Countries

1. Cambodia
2. People’s Republic of China
   a. Yunnan Province
   b. Guangxi Zhuang Autonomous Region
3. Lao People’s Democratic Republic
4. Myanmar
5. Thailand
6. Viet Nam

Quick Data

Population: 326 million
Area: 2.6 million km²

GDP: US$1.165 trillion
GDP purchasing power parity: US$2.909 trillion
GDP per capita: US$3,105.95
GDP per capita purchasing power parity: US$7,746.41
Average GDP growth rate (2015): 6.7%

26 AFTA: Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam are members. APEC: Thailand, Viet Nam, and China are members. RCEP: Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam and China are members. MGC: Cambodia, Lao PDR, BIMSTEC: Myanmar and Thailand are members.
Thailand and Viet Nam are rapidly industrializing countries, with a growing manufacturing sector and are part of major global value chains (e.g., Thailand is a regional hub for the manufacture of cars such as Toyota, Ford and BMW). Guangxi and Yunnan are less industrialized compared to other administrative regions of China. The economies of Cambodia, Lao PDR and Myanmar continue to have a large agricultural component, with agriculture accounting for more than 25% of GDP and hiring around 50% or more of the workforce.

A key feature of the GMS is interconnectivity – in terms of interstate official economic corridors and transborder migration. In 1992, with assistance from the ADB, the six countries entered into a sub regional economic cooperation program to enhance economic relations and infrastructural connectivity. The GMS has a number of growth/connectivity corridors that link up towns and cities across member states’ borders. Intra-GMS trade has grown from 4% of total trade share and US$26 billion in 2000 to 8% of total trade share and US$413 billion by 2014. The GMS is also seen as having the potential to become a major low-cost production hub due to its integration. While the GMS has enjoyed robust growth in the past, the growth is unbalanced, with significant differences in the levels of income and the development of the social sectors (Table 1). This has led to substantial cross-border migration, mainly as people move from less developed to more developed countries in search of job opportunities.

As the GMS countries occupy similar rungs on the development ladder, there is internal competition – such as that for rice exports, tourism and labor-intensive manufacturing such as garments. Other challenges include incomplete cross-border and multimodal infrastructure; the high cost of doing business; tightly regulated transportation rules; underdeveloped logistic services; insufficient data on informal trade and cross-border labor movement; and the slower development pace of border regions.

Country economic backgrounds

Cambodia has enjoyed strong economic growth in recent years averaging 7.17% between 2011 and 2015, fueled by strong consumer spending due to rapid expansion in real income and credit, along with strong foreign direct investment (FDI) inflows from China. However, it experienced a decline in international tourism arrivals and sluggish growth in the agricultural sector, along with competition from Myanmar and Viet Nam for its main export items – garments and rice. The government launched a new industrial development policy in 2015 to expand Cambodia’s industrial base.

Lao PDR continued to enjoy strong growth averaging 7.88% between 2011 and 2015. The growth was driven by the operation of a new hydroelectric plant (Nam Theun 2) and increased mining output. The government has prioritized economic diversification for job creation –

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31 Chandran, N. “Is this Asia’s new manufacturing hub?” CNBC, 29 December 2014.
33 UNESCAP 2016, p. 85.

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Table 1. Human Development Index scores and ranks of GMS countries

<table>
<thead>
<tr>
<th>Human Development Index</th>
<th>Cambodia</th>
<th>Lao PDR</th>
<th>Myanmar</th>
<th>Thailand</th>
<th>Viet Nam</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0.555</td>
<td>0.575</td>
<td>0.536</td>
<td>0.726</td>
<td>0.666</td>
<td>0.727</td>
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<tr>
<td>Rank (out of 189)</td>
<td>143</td>
<td>141</td>
<td>148</td>
<td>93</td>
<td>116</td>
<td>90</td>
</tr>
</tbody>
</table>
about two thirds of the Laotian workforce are engaged in the agricultural sector, while the resource sector that has driven recent economic growth has a limited capacity to absorb labor.34 While the government has made structural transformation of the economy away from agriculture, workers are primarily shifting to low-skill, non-tradable service activities.35 The government is also working to make Lao PDR more attractive to foreign investment in non-extractive sectors, such as infrastructure, and has also established at least 12 special and specific economic zones to attract manufacturing sector jobs.36

Since political and economic liberalizations began in 2011–2012, Myanmar has enjoyed strong economic growth driven by manufacturing, construction, tourism and the natural gas sectors.37 Average GDP growth stood at 7.33% for 2011–2015. However, severe floods, uncertainty surrounding general elections, trade and budget deficits tempered growth in 2015–2016. Low natural gas prices have also led to a 40% decline in export earnings in 2016.38 The country’s reforms and the dismantling of sanctions also led to significant increases in FDI and tourism arrivals.

Thailand’s economy grew at an average of 2.88% in 2011–2015. Tourism continued to grow despite the August 2015 bombing in Bangkok. Private investment contracted due to large excess capacity in the manufacturing sector; flooding and political uncertainties also hampered Thailand’s economic growth. The government announced measures to support small- and medium-sized enterprises and the real estate sector, along with tax initiatives and efforts to expedite investment.39 It has also initiated 20 major infrastructure projects – mainly railway projects, with plans to spend around US$50.8 billion by 2022 in order to lower logistics costs and attract further investment.40

The economy of Viet Nam grew at an average of 5.91% between 2011 and 2015, with growth accelerating since 2011. This has been driven by the expansion of its manufacturing industries, specifically the electronics sector which grew from 5% to 30% of total exports between 2010 and 2015.41 Total investment also grew due to strong FDI inflow and rising government spending. The government is diversifying the economy into higher-value products.42 China’s economy grew at an average of 7.87% for 2011–2015, a moderation from double-digit growth in the 2000s. Exports, which have driven much of China’s growth, have slumped since 2015, partly due to geopolitics. The government has been relying on higher public spending and bank loans to boost the economy.43 The financial sector experienced heightened volatility in recent years, with the stock market undergoing substantial corrections over concerns of slower economic growth and currency devaluation. The government pledged reforms to move the economy towards a more market-based system, which are expected to include interest rate deregulation and increasing exchange rate flexibility.44,45

**Sector backgrounds**

This section provides a brief overview on the three selected sectors in the GMS: the plantation sector, the oil and gas sector and the travel and tourism sector.

**Plantation sector in the GMS**

Agriculture forms the mainstay of the economy of the GMS countries, directly supporting the livelihoods of approximately 200 million people (approximately 60% of the region’s inhabitants), most of who are engaged in small-scale agriculture. Rice is the predominant crop throughout the GMS, with around 60 million people involved and producing more than 44% of the world’s rice.46 Apart from China, the other five GMS countries are net exporters of rice. Other key crops include corn, sugar, soy beans, cassava, coffee, rubber and palm oil. In recent years, the GMS countries are shifting away from subsistence farming to more diversified economies with more open, market-based systems.

In Thailand and Viet Nam, the agriculture sector has also industrialized, reflecting the countries’ economic growth. Large-scale economic land concessions are made for plantations in Lao PDR and Cambodia, often for companies mainly from China and Viet Nam. Cambodia, Lao PDR, Myanmar and Viet Nam have implemented reforms to improve the efficiency and productivity of their agricultural sectors. These reforms include liberalization of prices for inputs and outputs; elimination of subsidies; removal of trade restrictions to improve farmer incomes and enhance competition; removal of regulatory controls and other quantity restrictions on input and product markets; lifting of production quotas; restructuring of state-owned enterprises; and modernization of financial systems through tax reforms and exchange rate unification.47

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34 Ibid., p.8.
39 UNESCAP 2016, p. 89.
43 Tan, H. “Chinese leaders talk economic growth, structural reforms at National People’s Congress,” CNBC, 6 March 2016.
44 UNESCAP 2016, pp. 57–58.
45 “China Has Returned to Reform Mode,” Bloomberg, 26 August 2016.
The plantation sector in the GMS comprises both small and large plantations. Large plantations (i.e., those with a large acreage) are operated by both local owners and foreign companies – the latter sometimes on concession land. Thailand has domestically owned large plantations, while Cambodia and Lao PDR have large, foreign-owned, concession plantations mainly belonging to companies based in Viet Nam and China.

The agricultural sector is ubiquitous throughout the GMS and employs a significant workforce including MMPs. Employees may be exposed to malaria through activities such as land clearance, planting, harvesting and processing of crops. Agricultural land use can also increase malaria transmission. Rice is one of the main staples in the GMS, and wet rice cultivation lacking proper drainage can facilitate mosquito breeding. Land clearance affects mosquito behavior and creates new breeding locations. Furthermore, migrant workers who travel for agricultural work risk introducing malaria to non-endemic regions.

Oil and gas sector in the GMS

The oil and gas sector is a major source of revenue for GMS countries such as Myanmar, Thailand and Viet Nam. The GMS has proven to have reserves of around 1.2 billion cubic meters of natural gas, 0.82 billion tons of oil and 28 billion tons of coal. Myanmar, Thailand and Viet Nam possess large natural gas deposits, and Viet Nam has the largest oil reserves. Oil production in the region has declined since 2000, and has been unable to meet demand. On the other hand, natural gas production has increased and exceeds demand.

The oil and gas landscape includes both local and international companies. Most GMS countries have state-owned oil companies (e.g., Lao State Fuel Company in Lao PDR, MOGE in Myanmar, PTT in Thailand, PetroViet Nam in Vietnam and CNPC in China), with the exception of Cambodia, which is also considering establishing a national oil company. These state-owned oil companies play large roles in the exploitation of hydrocarbon resources. International oil companies such as Total S.A., Chevron and Shell have operations across GMS countries. These companies also employ a large workforce including mobile and migrant workers, and employers play a critical role in the health and well-being of the employees. Oil and gas companies operate on-shore facilities, some of which transverse malaria endemic regions (e.g., overland pipelines). Operational and maintenance work along such areas expose the workers to malaria.

Travel and tourism sector in the GMS

Tourism plays a major role in the economies of all GMS countries (Table 2 and Table 6). In 2014, the region saw 52.93 million international tourist arrivals which directly contributed US$45.65 billion. Total contribution amounted to more than US$92 billion, with more than 13 million people employed in the tourism sector in total. Total earnings from tourism contribute around 30% of Cambodia’s GDP and 19.3% of Thailand’s economy. Similarly, 26.4% of the workforce in Cambodia and 14.1% of the Thai workforce are employed by the tourism industry.

Table 2. Tourism statistics for GMS countries,* 2015

| Total international arrivals: | 43.42 million |
| Direction contribution to the economy: | US$41.5 billion |
| Total contribution to the economy: | US$92.18 billion |
| Direct employment: | 5,793,000 |
| Total employment: | 13,223,500 |

*Excluding Yunnan Province and Guangxi Zhuang Autonomous Region, China.


Between 2000 and 2014, the number of international tourism arrivals in the GMS countries (excluding China) increased by 340% from 12.79 million to 43.43 million. Thailand is a major international tourism destination, accounting for more than half of all tourism arrivals in the five GMS countries. However, it has seen a decline in market share as other countries become more popular; in 2000, Thailand accounted for 74.88% of all tourism arrivals, but accounted for 57.12% in 2014, although arrivals grew by 260% in absolute terms. Increased intra-GMS connectivity and inter-regional connectivity has presented a mixed scenario; some travelers opt to travel across more than one GMS country, having spillover effects across different GMS countries. On the other hand, competition between the destinations divert tourists, worse so in times of unfavorable tourism climate (such as political instability and natural disasters).

Between 2010 and 2015, the five GMS countries saw a doubling of air passengers from 44.8 million to 88.5 million. While the number of airline passengers has increased, there is increasing competition, as local carriers have to contend with Gulf state carriers (e.g., Emirates, Qatar and Etihad) and budget airlines (e.g., JetStar, AirAsia and LionAir). Budget carriers now account for 54% of capacity in Southeast Asia, compared to 38% in 2009. Comparably, budget airlines account for 31% of capacity in the US and 39% in Europe, while the global average is 26%. This has resulted in many regional carriers facing grim outlooks, while both full-service carriers and budget airlines compete to slash prices in order to attract customers, resulting in ever-slimming profit margins despite a decline in oil prices.

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49 World Travel and Tourism Council Country Economic Impact reports, 2015
Thailand’s flag carrier, Thai Airways International, posted a loss of US$480.6 million in 2015 – its second straight year of losses. Despite reducing flight frequencies, Thai Airways’ percentage of seats sold per flight fell below 70%. AirAsia, the leading budget airline in Asia, saw net profits decline by 77%. According to the International Air Transport Association, airlines in the Asia Pacific generate less than US$5 profit per passenger.52

Malaria threatens not only the local communities, but also regional and international travelers visiting malaria-endemic regions. Furthermore, there is also the risk of malaria (and drug resistance) being exported through tourists, travelers and guest workers. Because of large-scale investments by Asian countries (e.g., China, Viet Nam) in Africa, human movement between the two regions has increased, including in Sub-Saharan Africa which bears the overwhelming majority of the world’s malaria burden. Such movements risk the introduction of drug-resistant malaria into Africa, with potentially catastrophic consequences. According to the China Africa Research Initiative, more than 263,000 Chinese workers are working in various African countries and more than 10,000 Vietnamese workers are in Africa and the Middle East.53


3.4. Health and malaria background
This section provides a brief overview of the health issues in the GMS, including malaria and dengue, which has seen a major resurgence in recent years, and the condition of the health sector in the GMS countries (Table 5).

Malaria
Malaria is a major disease in the GMS (Figures 3a and 3b). In 2015, 152.3 million people were at risk of malaria (64% of the population), with around 30 million (12.6%) at high risk. According to the World Malaria Report 2016, the GMS countries had 181,835 confirmed cases of malaria and 85 confirmed deaths.55 This is a substantive improvement from 2000, when the GMS countries had 1.42 million confirmed cases and nearly 4,300 deaths. *P. falciparum* malaria accounts for 55% of cases and most malaria deaths in the GMS. Myanmar has the highest malaria burden in the GMS, accounting for 42.1% of all confirmed malaria cases and 43.5% of all reported malaria deaths.

The GMS has been the traditional hotspot for the emergence of resistance to antimalarial drugs. *P. falciparum* resistance to chloroquine and sulfadoxine-pyrimethamine

55 Does not include 3,116 reported malaria cases and 0 confirmed deaths in China.
Artemisinin resistance has been detected in all GMS countries except China, as a consequence of poor treatment practices, inadequate patient adherence to prescribed antimalarial regimens, and the widespread availability of oral artemisinin-based monotherapies and substandard medicines. Artemisinin resistance threatens to undermine and reverse the progress made against malaria not only in the GMS, but across the Asia Pacific and the world.

In 2011, the GPARC recommended malaria control and elimination to stop the spread of drug-resistant parasites. Subsequently, the WHO’s Malaria Policy Advisory Committee concluded in September 2014 that *P. falciparum* elimination in the GMS is technically feasible, and “should be the recommended public health response to address the challenge of growing parasite resistance to artemisinin and partner drugs.” In 2015, the WHO published its Strategy for Malaria Elimination in the Greater Mekong Subregion (2015–2030) with the objectives to:

1. Interrupt transmission of *P. falciparum* in areas of multidrug resistance, including ACT resistance by 2020, and in all areas of the GMS by 2025
2. Reduce malaria in all high-transmission areas to less than 1 case per 1,000 population at risk, and initiate elimination activities by 2020
3. Prevent the reintroduction of malaria in areas where it has been interrupted

In line with these recommendations, the region is working towards malaria elimination in order to address the emergence and spread of artemisinin- and multidrug-resistant malaria in the GMS. In April 2013, the WHO launched the Emergency Response to Artemisinin Resistance in the GMS, with a dedicated regional hub established in Cambodia. The Global Fund, following the WHO’s lead, allocated US$124 million for 2014–2017 to establish the Regional Artemisinin-resistance Initiative (RAI), with UNOPS Myanmar as the principal recipient. In November 2013, the APLMA was formed to accelerate progress against malaria and to eliminate it by 2030.

**Dengue**

Dengue is another major vector-borne disease in the GMS. According to the 2015 Global Burden of Disease study, the GMS countries had 6,729,881 dengue cases and 1,010 dengue deaths in 2015 (Figures 4a and 4b). The GMS, along with the Asia Pacific region has seen a resurgence in dengue cases in recent years. This, along with the lack of a vaccine or cure, dengue’s changing epidemiology, and occurrence in urban centers mainly affecting children, has cast dengue fever in a more serious light than malaria for both the public and private sectors across the GMS.

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60 Personal interviews and exchanges conducted across the GMS and wider Southeast Asia.
High malaria endemicity is common in border areas that are remote and inhabited by ethnic minorities who lack physical, social and financial access to preventive and, curative care. Remoteness, language barriers and in some cases, the security situations hamper surveillance and intervention efforts. In certain areas with poor health infrastructure, ethnic health organizations have worked to fill in the gap, but they operate outside of the central government health system.

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**Weak health infrastructure**

The GMS is also characterized by its weak health infrastructure due to both underinvestment and a number of social, cultural and economic factors. In 2014, health expenditure per capita ranged from US$420 in China and US$360 in Thailand to US$20 in Myanmar and US$32.5 in Lao PDR (Figures 5a and 5b). Alternatively, public health expenditure is 3.9% and 5.6% of GDP in China and Thailand respectively, while Myanmar spends 1.04% and Lao PDR spends 0.943% of their GDP on health.

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**Figure 4a and 4b. Comparison of malaria and dengue cases and deaths in the GMS, 2000–2015**

**Figure 5a and 5b. Comparison of health expenditure among GMS countries, 2000–2014**
The emergence of drug resistance to artemisinin is due in part to the availability and sale of counterfeit or sub-standard medicines, including products that were fraudulently mislabeled. Inhabitants’ utilization of the health infrastructure is also irregular; for example, in Myanmar, the first point of consultation for people with ailments are mostly untrained pharmacists and informal health workers. There are also certain segments of the population who perceive modern medicine in a negative manner – in particular due to concerns about injections, blood tests and surgery, or about medicine being ineffective, especially for chronic or terminal illnesses. On the other hand, people consulting physicians tend to see injections as panaceas and often request for an injection. In Cambodia, patients also request injections or intravenous drips. “Drug cocktails” consisting of provider-composed bags of mixed drugs are also extremely popular.

Mobile migrant populations

MMPs consist of people who have transplanted from their place of domicile primarily due to economic/labor-related reasons, but also in certain cases other factors such as conflict or displacement. Economy- and labor-based migration within the GMS can be categorized as international migration, internal migration and border mobility. International migration consists of workers who have relocated across international borders for work. Internal migration comprises rural-urban migration, along with migrants who move from one region to another within national borders for work. Border mobility consists of frequent/back-and-forth movement of people (including daily commuters) across national borders related to border trade and employment in business along border economic zones and labor markets.

Labor migration in the GMS is widespread and concerns at least 3–5 million workers. However, a precise estimate is difficult because very little data are available. Due to Thailand's rapid development since the 1990s, it has attracted laborers from Myanmar, Lao PDR and Cambodia, mainly into its agriculture, fisheries and manufacturing sectors. It hosts 60% of the total migrants in the GMS region, 80% of whom are from Myanmar. According to the International Organization for Migration, Thailand hosts around two million migrants from Myanmar, 970,000 from Lao PDR and 805,000 from Cambodia. The bulk of labor migrants work in low-skilled jobs and are irregular workers. In the GMS, MMP movements are largely related to occupation and economic drivers. In certain cases, conflict causes displacements that can be temporary (i.e., people return to their communities once conflict subsides) or long-term (i.e., internally displaced populations living in refugee camps).

MMPs are more vulnerable to health challenges, including malaria. However, it is not mobility per se that leads to high risks. Instead, it is the living and working conditions, nutrition and sanitation situation, barriers to seeking healthcare (e.g., security check points deterring undocumented workers from accessing health services) and exploitation and trafficking of MMPs that increases their risk of poor health. In addition, there are gaps in surveillance and followup, along with the issue of imported communicable diseases. Undocumented MMPs or those employed in informal or illegal labor may prefer to avoid contact with public services including healthcare, while those in regular legal employment may be easy to work with if they and their employers are approached in a sensitive manner.

MMPs are highly vulnerable to malaria due to barriers to access to basic and quality healthcare services for both health and malaria preventive and curative services. They also occupy a crucial position in the malaria elimination equation, with the WHO identifying 11 categories of MMPs relevant for GMS malaria programs (Box 1, page 21). The GMS countries are now pursuing an expansion of activities targeting MMPs largely due to the Global Fund’s country grants and the RAI Intercountry Component. MMPs are essential to malaria elimination in the GMS – strategies linked to multisectoral surveillance and response mechanisms will be crucial to follow malaria to the last case, prevent reintroduction and quickly address multidrug resistance.
The following is a suggested list of categories of MMPs that are relevant for GMS malaria programs to consider:

1. remote (forested) populations;
2. seasonal agricultural workers (individuals or families) in farm plantation (rubber, cassava, oil palm, coffee, corn, orchards, sugar cane, bamboo, etc.);
3. populations involved in long-term official/planned mega or large projects (hydroelectric dams, road construction, pipelines, gem mines, logging, gold and mineral extraction, etc.); industries producing commodities and services in malaria endemic areas; long-term internal migration from non-endemic to endemic provinces (or vice versa), including those moving from “poor” to more attractive locations/provinces (for months or years); and relocation (official or otherwise) to forested areas to establish farms;
4. individuals or group of individuals (small or big) working in the (deep) forest from the nearby forest-fringe villages for a various number of nights (generally days or weeks or/and generally unplanned) for clearing forest to expand land, collecting forest products, hunting, logging; or working in small gold mines, charcoal sites, bee honey collection, etc.;
5. internally displaced populations and refugees;
6. civil service officers (agronomists, forestry staff, etc.);
7. security forces, border patrols’ population (and with their families);
8. populations crossing borders (seeking economic opportunities – migrant workers and individual business);
9. national populations back home from abroad;
10. foreigners and tourists;
11. United Nations soldiers (from/to GMS) as part of peacekeeping operations abroad.

Box 1. WHO classification of mobile migrant populations for the GMS

<table>
<thead>
<tr>
<th>Origin</th>
<th>Destination</th>
<th>Status</th>
<th>Sector or Skill Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>Thailand and Viet Nam</td>
<td>Regular and irregular to Thailand;</td>
<td>Primarily low-skilled (agriculture, fisheries, construction); primarily agriculture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>irregular to Viet Nam</td>
<td>in southern Viet Nam</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Thailand and Yunnan, China</td>
<td>Regular and irregular to Thailand;</td>
<td>Primarily low-skilled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not known to Yunnan</td>
<td></td>
</tr>
<tr>
<td>Myanmar</td>
<td>Thailand and Yunnan, China</td>
<td>Regular and irregular to Thailand;</td>
<td>Primarily low-skilled and business persons in Yunnan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>regular to Yunnan</td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>No significant intra-GMS migration</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Cambodia, Lao PDR and Guangxi</td>
<td>Mostly irregular (no legal channels to other GMS economies)</td>
<td>Primarily low-skilled to Guangxi; medium to highly skilled and business persons to Cambodia and Lao PDR</td>
</tr>
<tr>
<td>Yunnan Province, China</td>
<td>Lao PDR, Myanmar and Viet Nam</td>
<td>Regular and irregular</td>
<td>Low-skilled (agriculture, mining), medium-skilled and business persons.</td>
</tr>
</tbody>
</table>

Sources: Central Intelligence Agency, the International Labour Organisation, the International Monetary Fund, the World Bank and Deutsche Bank Research China Chartbook 2016.
Table 4. Economic indicators of the GMS countries

<table>
<thead>
<tr>
<th>Economy</th>
<th>Cambodia</th>
<th>Lao PDR</th>
<th>Myanmar</th>
<th>Thailand</th>
<th>Viet Nam</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population (in millions)</td>
<td>15.6</td>
<td>6.8</td>
<td>53.9</td>
<td>68</td>
<td>91.7</td>
<td>48.4</td>
</tr>
<tr>
<td>GDP (billions US$, 2016)</td>
<td>19.4</td>
<td>13.7</td>
<td>68.2</td>
<td>390.6</td>
<td>200.5</td>
<td>216.8</td>
</tr>
<tr>
<td>GDP (billions US$ purchasing power parity, 2016)</td>
<td>58.9</td>
<td>40.9</td>
<td>311</td>
<td>1,161.3</td>
<td>594.9</td>
<td>390.2</td>
</tr>
<tr>
<td>GDP per capita (US$, 2016)</td>
<td>1,227.7</td>
<td>1,921.2</td>
<td>1,306.6</td>
<td>5,662.3</td>
<td>2,164.3</td>
<td>4,187.7</td>
</tr>
<tr>
<td>GDP per capita (US$ purchasing power parity, 2016)</td>
<td>3,736</td>
<td>5,718.5</td>
<td>5,953.1</td>
<td>16,835.4</td>
<td>6,421.7</td>
<td>7,538</td>
</tr>
<tr>
<td>GDP growth rate (% , 2015)</td>
<td>7</td>
<td>7.4</td>
<td>7.3</td>
<td>2.8</td>
<td>6.7</td>
<td>8.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GDP Contribution by sector (% , 2014)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>30.5</td>
<td>27.6</td>
<td>27.8</td>
<td>10.2</td>
<td>17.7</td>
<td>15.5</td>
</tr>
<tr>
<td>Industry</td>
<td>27.1</td>
<td>31.3</td>
<td>34.5</td>
<td>36.8</td>
<td>39</td>
<td>41.2</td>
</tr>
<tr>
<td>Services</td>
<td>42.4</td>
<td>41</td>
<td>37.7</td>
<td>53</td>
<td>43.3</td>
<td>30.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>48.7</td>
<td>73.1</td>
<td>54.2</td>
<td>32.2</td>
<td>48</td>
</tr>
<tr>
<td>Industry</td>
<td>19.9</td>
<td>6.1</td>
<td>23.7</td>
<td>16.7</td>
<td>21</td>
</tr>
<tr>
<td>Services</td>
<td>31.5</td>
<td>20.6</td>
<td>22.1</td>
<td>51.1</td>
<td>31</td>
</tr>
<tr>
<td>Natural resources rent (% of GDP)</td>
<td>2.0</td>
<td>17.3</td>
<td>4.8</td>
<td>1.2</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Sources: Central Intelligence Agency, the International Labour Organisation, the International Monetary Fund, the World Bank, Deutsche Bank and Research China Chartbook 2016.
Table 5. Health indicators of the GMS countries

<table>
<thead>
<tr>
<th>Health</th>
<th>Cambodia</th>
<th>Lao PDR</th>
<th>Myanmar</th>
<th>Thailand</th>
<th>Viet Nam</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria (2015)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>People at risk (% of population)</td>
<td>11m (70.7)</td>
<td>6.3m (92.6)</td>
<td>32m (59.5)</td>
<td>34m (50)</td>
<td>68.9m (73.7)</td>
<td>33,340*</td>
</tr>
<tr>
<td>People in high-transmission area (% of population)</td>
<td>7.5m (48.1)</td>
<td>2.1m (31.2)</td>
<td>8.5m (15.8)</td>
<td>5.4m (8)</td>
<td>6.3m (6.8)</td>
<td></td>
</tr>
<tr>
<td>People in low-transmission area (% of population)</td>
<td>3.5m (22.6)</td>
<td>4.2m (61.4)</td>
<td>23.5m (43.7)</td>
<td>28.5m (42)</td>
<td>62.5m (66.9)</td>
<td></td>
</tr>
<tr>
<td>Confirmed cases</td>
<td>33,930</td>
<td>36,056</td>
<td>77,842</td>
<td>14,755</td>
<td>19,252</td>
<td>3,116</td>
</tr>
<tr>
<td>Reported deaths</td>
<td>10</td>
<td>2</td>
<td>37</td>
<td>33</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Dengue (2015)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cases</td>
<td>17,181</td>
<td>12,337</td>
<td>65,882</td>
<td>148,385</td>
<td>104,808</td>
<td>20,862</td>
</tr>
<tr>
<td>Deaths</td>
<td>85</td>
<td>48</td>
<td>326</td>
<td>154</td>
<td>332</td>
<td>64</td>
</tr>
<tr>
<td>Health Spending (2014)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government spending on health per capita (US$)</td>
<td>61</td>
<td>33</td>
<td>20</td>
<td>360</td>
<td>142</td>
<td>420</td>
</tr>
<tr>
<td>Out-of-pocket expenditure as % of total health expenditure</td>
<td>74.2</td>
<td>39</td>
<td>50.7</td>
<td>11.9</td>
<td>36.8</td>
<td>32</td>
</tr>
<tr>
<td>Out-of-pocket expenditure as % of private expenditure on health</td>
<td>95.2</td>
<td>78.8</td>
<td>93.7</td>
<td>53.8</td>
<td>80</td>
<td>72.4</td>
</tr>
<tr>
<td>Public health expenditure as % of GDP</td>
<td>1.3</td>
<td>0.9</td>
<td>1</td>
<td>5.6</td>
<td>3.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Government expenditure as % of total health expenditure</td>
<td>22</td>
<td>50.5</td>
<td>45.9</td>
<td>86</td>
<td>54.1</td>
<td>55.8</td>
</tr>
<tr>
<td>Government health expenditure as % of government budget</td>
<td>6.8</td>
<td>3.6</td>
<td>1.8</td>
<td>21.3</td>
<td>10.4</td>
<td>10.6</td>
</tr>
<tr>
<td>Main Indicators (2014)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Development Index score</td>
<td>0.555</td>
<td>0.575</td>
<td>0.536</td>
<td>0.726</td>
<td>0.666</td>
<td>0.727</td>
</tr>
<tr>
<td>Human Development Index rank</td>
<td>143</td>
<td>141</td>
<td>148</td>
<td>93</td>
<td>116</td>
<td>90</td>
</tr>
<tr>
<td>Life expectancy at birth (years)</td>
<td>68.2</td>
<td>66.1</td>
<td>65.9</td>
<td>74.4</td>
<td>75.6</td>
<td>75.8</td>
</tr>
<tr>
<td>Infant mortality (per 1,000 live births)</td>
<td>25</td>
<td>51</td>
<td>40</td>
<td>11</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>Under-five mortality (per 1,000 live births)</td>
<td>29</td>
<td>67</td>
<td>50</td>
<td>12</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>Maternal mortality ratio</td>
<td>161</td>
<td>197</td>
<td>178</td>
<td>20</td>
<td>54</td>
<td>27</td>
</tr>
<tr>
<td>Physicians per 1,000 people (2012)</td>
<td>0.169</td>
<td>0.18</td>
<td>0.612</td>
<td>0.393 (2010)</td>
<td>1.19 (2013)</td>
<td>1.94</td>
</tr>
<tr>
<td>Nurses and midwives per 1,000 people (2012)</td>
<td>0.791</td>
<td>0.876</td>
<td>1.003</td>
<td>2.077 (2010)</td>
<td>1.236 (2013)</td>
<td>1.85</td>
</tr>
</tbody>
</table>


*Number of people living in active foci
### Table 6. Tourism indicators of the GMS countries

<table>
<thead>
<tr>
<th>Tourism</th>
<th>Cambodia</th>
<th>Lao PDR</th>
<th>Myanmar</th>
<th>Thailand</th>
<th>Viet Nam</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International tourism arrivals (2014)</td>
<td>4.5</td>
<td>3.16</td>
<td>3.08</td>
<td>24.81</td>
<td>7.87</td>
<td>5.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International tourism receipts (millions US$, 2014)*</td>
<td>3,220</td>
<td>642</td>
<td>1,613</td>
<td>42,063</td>
<td>7,330</td>
<td>2,421</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International tourism expenditure (millions US$, 2014)**</td>
<td>527</td>
<td>401</td>
<td>137</td>
<td>8,822</td>
<td>2,150</td>
<td>n.a.</td>
</tr>
<tr>
<td>Direct contribution (millions US$, 2014)***</td>
<td>2,300</td>
<td>570</td>
<td>990</td>
<td>29,630</td>
<td>8,010</td>
<td>n.a.</td>
</tr>
<tr>
<td>% of GDP</td>
<td>13.5</td>
<td>5.0</td>
<td>2.2</td>
<td>8.6</td>
<td>4.6</td>
<td>n.a.</td>
</tr>
<tr>
<td>Total contribution (millions US$, 2014)</td>
<td>5,110</td>
<td>1,700</td>
<td>2,220</td>
<td>66,980</td>
<td>16,170</td>
<td>n.a.</td>
</tr>
<tr>
<td>% of GDP</td>
<td>29.9</td>
<td>14.7</td>
<td>4.8</td>
<td>19.3</td>
<td>9.3</td>
<td>n.a.</td>
</tr>
<tr>
<td>Direct employment (% of labor force)</td>
<td>985,500  (11.7)</td>
<td>129,000 (94.2)</td>
<td>505,000 (1.8)</td>
<td>2,210,000 (5.8)</td>
<td>1,963,500 (3.7)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Total employment (% of labor force)</td>
<td>2,221,500 (26.4)</td>
<td>396,000 (12.8)</td>
<td>1,134,500 (4)</td>
<td>5,383,000 (14.1)</td>
<td>4,088,500 (7.7)</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Sources: World Travel and Tourism Council and Deutsche Bank Research China Chartbook 2016.

*International tourism receipts: Expenditures by international inbound visitors, including payments to national carriers

**International tourism expenditure

***Approximate, based on World Travel and Tourism Council data and current exchange rates
4. Findings

There was one malaria death, but people suspected it was dengue. Dengue is more dangerous than malaria. You also die from dengue.
– Thai plantation owner

4.1. Malaria and health issues
Malaria along with dengue were identified as major health concerns, although most respondents perceived dengue as a bigger threat. Respondents across the four countries also reported that malaria cases are low and declining.

Decline in malaria cases can be attributed to a number of factors, including climate change, deforestation, increased financing (both by donors and domestic sources) and effective malaria programs. A Thai respondent reported that the government was effective and had “100% control” over malaria. In Cambodia, a respondent stated that malaria was declining mainly due to land clearance and deforestation. In Myanmar, an oil and gas sector respondent reported that malaria cases were no longer reported in the local communities where the company operated clinics. Similarly, in Lao PDR, respondents stated that malaria has not been an issue for the past 4–5 years. Some respondents from Cambodia also indicated that tuberculosis and hepatitis B are mentioned rather than malaria as key health challenges.

However, a plantation sector respondent with operations in eastern Myanmar reported that mosquitoes are now found in the highlands that previously did not have mosquitoes. Respondents also reported that substandard medical practices (such as people taking antimalarial drugs to treat other diseases such as diarrhea) and uninformed health practices hamper malaria control and elimination measures. One company reported that malaria and dengue were health issues, but the company did not have experience in dealing with the diseases.

One respondent in Thailand stated that malaria is an issue, but that the communities had their own malaria posts, making it easy for people to get treatment. Lately, dengue has become a major health issue more serious than malaria, and Zika was another major concern. A plantation owner who also works as a village malaria worker along the Thai-Myanmar border stated that elimination was possible in Thailand, but had concerns of importation from Myanmar. Malaria has declined in the past 2–3 years, while villagers also knew how to prevent malaria. It is also now easy for migrant workers to utilize malaria posts.

4.2. Awareness
A respondent in Myanmar stated that local inhabitants saw mosquitos more as a nuisance than a health concern, and therefore did not take proper protective measures such as using a bednet. A Thai respondent stated that community leaders also did not perceive malaria as a major problem. Furthermore, the government’s community development policy was focused on infrastructure and not on health. A hotelier in Cambodia stated that there is a lot of talk on malaria, but not much attention was being paid to malaria.

In remote malaria endemic areas, there is a lack of awareness or misinformation on the cause of malaria. In Thailand, a respondent stated that local communities believe malaria is caused by flies, while in Myanmar a respondent reported that there are beliefs that malaria is caused by drinking or swimming in dirty water.

It is difficult to work with the private sector. Large owners don’t have the time and also do not like to have such activities, as they think it is a waste of time and with no effect on profits.
– Thai plantation

4.3. Private sector perspectives
The companies interviewed were generally receptive of involvement in malaria elimination efforts. Most private sector respondents reported that they would like the government to take the lead in malaria elimination efforts. They also indicated that the government can promote private sector buy-in by presenting concrete action plans for the private sector to be involved in. A Cambodian hotel stated that there is a need for clarity on the roles and responsibilities of the partners in order to build a viable PPP, while another hotel reported that the relevant government ministries should prioritize communicating to senior management and corporate leadership. In Lao PDR, the businesses interviewed were new to the idea of private sector involvement in malaria elimination, though many were open to participation in such initiatives.
An oil and gas company in Myanmar stated that visibility is crucial for businesses undertaking CSR activities. A Cambodian plantation reported that the company would welcome cooperation in order to receive additional bed-nets and needed medicines.

**4.4. Plantations**

Large-scale plantations that were interviewed or approached to be interviewed tended to be unreceptive to the interview process. Five large Thai plantations declined to be interviewed, with two stating that information pertaining to their employees and their budget were sensitive “trade secrets.” In Lao PDR, the large plantations were more receptive but were not fully forthcoming in sharing information.

Plantations have two types of migrant workers – the majority are both unskilled and skilled workers who have migrated from less developed regions or countries in search of work, along with a much smaller number of cross-border skilled workers/managerial staff from the countries that operate the concession plantations.

Plantation owners are quite aware of the risks of malaria and other vector-borne diseases, which are seen as health challenges to both the plantation’s productivity (specifically for skilled workers) and also to the overall health status of the community. Most plantations in the GMS lack on-site health services and send their sick workers to the nearest local health center. Plantations across the GMS already collaborate with a number of civil society organizations (CSOs) for public health activities, including the distribution of long-lasting insecticidal nets (LLINs). In Lao PDR, the plantation respondents stated that private sector involvement in malaria is an entirely new concept, hearing it for the first time from the interview process.

Certain plantation respondents did not raise any concerns with health, stating that the government was addressing the situation. Plantation owners were eager to participate in malaria activities, but mainly in raising awareness.

Rubber plantation owners in Myanmar reported that recent declines in their respective commodities have severely constrained their revenues. While they are eager to participate in malaria elimination activities, they are unable to contribute the manpower or financial resources.

The workers are mainly seasonal – hired during the planting and harvesting seasons – and are paid daily wages. Business owners also see unskilled workers as transient. Unskilled workers also less likely to have health insurance coverage and are also not tracked by plantation companies who see the workers as inherently transient.

Most plantation owners reported that the productivity for plantations is also not affected by the health of unskilled seasonal workers, as the workers are easily replaceable. In Myanmar, Lao PDR and Cambodia, the unskilled workers are mainly from surrounding communities while in Thailand, they tend to be cross-border migrant workers from neighboring countries (e.g., Myanmar, Cambodia and Lao PDR).

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**Skilled workers cannot be absent for so long from the work site. Their absence reduces productivity – the faster they return to work, the better.**

– Myanmar plantation owner

**Skilled workers**

Skilled workers are mostly permanent staff in plantations, including those who hold managerial roles. They tend to be from the major towns and cities, or from the home countries of the companies that operate concessions abroad, and live on-site.

Companies are sensitive to the productivity of skilled workers, and are thus more willing to invest in their health and welfare.

---

**Large owners don’t have the time and also don’t like to have health activities – they think it is a waste of time and with no effect on profit.**

– Thai plantation owner and key CSO informant

**Employer attitudes**

Overall, plantation operators perceive unskilled workers as transient and easily replaceable. Some extend this perception as unskilled workers not being worthwhile for companies to invest in their health and welfare. In addition, unskilled workers are also seen as illiterate, unaware of health risks, and not receptive towards IEC/BCC activities. In addition, ethno-linguistic barriers also cause plantation management to be negligent of workers’ conditions or challenges.

**Unskilled workers**

Unskilled workers form a major part of the workforce of plantations, and includes both internal and cross-border migrant workers. They rarely live on-site, often living in their relatives in nearby communities. A notable exception is a large rubber and pepper plantation in Cambodia, where a large number of workers along with their families lived on-site, with the company providing housing and 20 kilograms of rice per family per month in addition to the salary.
However, such attitudes are not uniform. A Thai plantation owner along the Thai-Myanmar border stated that the same group of unskilled workers have been returning to him for work during harvest season, due to his good attitude towards the workers, including investing in their health, helping the workers find employment after harvest season and helping them out financially, such as paying for construction of some of the migrant workers’ houses. There are also perceptions among smaller plantation owners that larger plantations are more profit-driven and negligent towards workers’ health and welfare.

Examples of private sector initiatives in Africa show that there is significant returns. AngloGold Ashanti, a mining company in Ghana believes that a sound malaria control program offers a good return on investment as it reduces the human consequences and costs of disease and improves community relations. Their malaria control program has evolved from in-house programs focusing on employees, to large-scale community-based interventions whose design, planning and implementation are undertaken in partnership with governments and NGOs, and the communities are also involved. At Obuasi in Ghana, there has been a 79% reduction in malaria cases reported since 2006. The mine has also reported an 84% reduction in new cases between 2010–2013 and a 94% reduction in the malaria lost time frequency rate. A feature of the program is the strong partnership between the company, communities and government.

There is no malaria and dengue fever is under control. We have to incentivize the communities to participate in health programs which are now becoming more NCD focused.

– Myanmar oil & gas company

4.5. Oil and gas sector

In Myanmar, an international oil and gas company has invested significantly in malaria programs. However, due to the decline of both malaria cases and the price of oil and gas, and the changing health landscape of the local communities, the company is reprioritizing towards NCDs and non-health related CSR activities. Its health program is also transitioning from a curative to preventive approach. Nationally, the company also reported scaling down its HIV program, although stated that commitments would be maintained in the communities along the overland pipeline that the company manages.

Another oil and gas company conducted pre-employment checkups and provides inpatient and outpatient medical treatment plan for employees and their families. However, it reported not having experienced malaria or dengue cases. The company also did not conduct specific activities such as providing bednets, vector control measures or IEC/BCC.

4.6. Tourism sector

Respondents stated that the tourism landscape in the GMS was changing. The market was becoming more competitive, as more destinations open up and new connections (roads and air travel) facilitate travel to previously less visited areas. Tourists from Asian countries, particularly China, formed the largest segment of foreign visitors. Cambodia has seen its tourism arrivals increase annually, although now faces competition from Myanmar. The peak season for most of the GMS is from October to March, after the Monsoon season, while the low season is from April through September.

There is a drop in Korean and Japanese tourists, primarily due to unfavorable exchange rates. The European tourism market is also less vibrant, with business owners speculating that the reasons were due to security concerns and the refugee crisis. In Cambodia, visitors engage in "volun-tourism" with activities pertaining to water and sanitation and other health issues in rural villages and urban poor settings. In Myanmar, a respondent stated that most tourism businesses operate in popular tourist sites that are located far away from malaria hotspots.

One hotel in Lao PDR reported that it used to clean the surrounding areas to prevent mosquito spawning sites and sprayed insecticides. However, it does not provide mosquito nets as the hotel believes that the surrounding areas are clearing enough to prevent mosquitos from breeding or spreading. Hotels in Cambodia and Lao PDR reported being impacted more by issues such as political and economic developments than from health issues such as epidemics (e.g., SARS).

Awareness of malaria is low throughout the industry. Respondents also stated that malaria is not actively discussed in the tourism sector and industry gatherings/conferences. Most respondents were eager to collaborate for malaria control and elimination activities, but wanted the public sector to take the lead. Businesses were generally enthusiastic to become involved in malaria control and elimination efforts. However, they were hesitant to directly mention malaria or health challenges, as they are concerned that doing so might deter tourists and affect tourism arrivals.

Elimination advocacy

The tourism sector lacks awareness on both the threat of malaria and the possible ways in which it can contribute. Respondents suggested raising malaria as an issue in
industry meetings. However, they stated that the meetings already have tight agendas, and were also uncertain of whether meeting attendees would be keen to learn more about the issue.

Malaria is not actively discussed in the tourism sector and there is no awareness or presentation at the annual tourism association meetings and general health issues are not discussed. Awareness campaigns can be raised during hotel group meetings if time permits.

In Lao PDR, many hotels contribute to and support health-related activities, though respondents said using large posters and signages with public health messaging could scare tourists. Some potential activities could include organizing events in the zone where hotels are located; disseminating information on malaria; and collecting contributions to cover fuel costs for public health staff conducting malaria activities.

4.7. Access to private sector stakeholders
Access to stakeholders depended largely on having connections or an interlocutor in reaching out to businesses for interviews. For example, there was little or no response from some of the large plantations, airlines, oil and gas companies and tourism businesses in the GMS to interview requests that were made without referrals or prior connections. In comparison, businesses that had prior interactions or contacted through interlocutors were more forthcoming in their responses.

Certain plantations claimed that the information being sought was sensitive and declined to be interviewed. In Lao PDR, there is uncertainty on how much effort is made by plantations for the healthcare of their workers, particularly the seasonal laborers.

4.8. Business associations
In most countries, tourism associations had the greatest influence on the operating procedures of individual businesses. An association-based approach is also seen as more equitable, as more enterprises are likely to participate and not undercut others.

Associations also have their own CSR programs; for example the Cambodian Hotel Association’s “Clear and Clean” program pools volunteers from hotels and restaurants to clean up market places in the morning.

Some business associations in Myanmar and Thailand have been engaged in health programs, including malaria control activities. However, these associations are reprioritizing their focus and moving away from malaria and communicable diseases to NCDs, or from health issues all together.

A plantation sector respondent in Myanmar stated that the plantation association – to which his business is part of – would collaborate in malaria programs if a trusted organization led the efforts. A hotelier in Cambodia reported that his international hotel chain could initiate programs to raise awareness about malaria and have mandatory training of employees on malaria and HIV annually, with funding possibly tapped from insurance companies.

4.9. Cross-border issues
Mobile migrant populations
There are three types of migration reported by the respondents and key informants: short intervals – workers cross the border, either officially or unofficially, to go to work in the morning and return in the evening or stay for the week; seasonal – where the workers relocate during cultivation and harvest seasons and then return to their origins; and full relocation – the workers and their families relocated to places near their work sites. The first two forms present challenges due to the more mobile nature of the workers.

MMPs utilize both official and unofficial checkpoints in crossing national borders. Legal migrant workers have access to medical services while illegal migrant populations have more difficulty accessing health services (e.g., Myanmar and Cambodian migrant workers in Thailand). Data on MMPs are difficult to compile, including their health history. Respondents stated that it was easier for relevant authorities and CSOs to collect MMP data at plantation-sites rather than at border crossings.

A respondent from Cambodia reported that many migrant workers who go to Thailand for work often return with diseases, including malaria. Plantation owners reported that bednet replacement was an issue, as MMPs were always moving around and often taking along their bednets. A Thai plantation owner and key informant working along the Thai-Myanmar border stated that MMPs could not easily access the local hospital, as there was a military camp beside the hospital and the MMPs feared being caught or interrogated.

Neglected populations
Border police, military personnel and local communities have sometimes been overlooked by malaria intervention programs. A key informant on the Thai-Myanmar border reported that bednet stockouts occurred for local communities, while MMPs were able to easily obtain bednets, while another key informant on the Thai-Cambodian border stated that soldiers and police personnel deployed along the border are not included in prevention activities and are vulnerable to malaria.
4.10. Employee health programs

Employee health insurance schemes
Poor access to health services and out-of-pocket expenditures are the main barriers for the workers. In Cambodia, health insurance coverage is included in the salary of employees to include accidents and basic coverage. Health cards costing around 500 riel are also available for free services for the poor. In Lao PDR, healthcare packages are offered to workers but not their families.

Workers in rubber and cassava plantations in Cambodia lack medicines as they live in forested areas. In larger plantation areas, basic first aid care is available due to recommendations provided by the Ministry of Labour. Plantations provide sick leave to workers and transportation to those in need to get to clinics or hospitals. However, they do not provide other health services or fees to cover for treatment costs. Some of the larger plantations (e.g., in Myanmar) offer health coverage. However, in the majority of the cases, many plantations lack health services for their workers.

In one company in Myanmar pays for the hospitalization and consultation fees to cover for treatment costs. Some of the larger plantations (e.g., in Myanmar) offer health coverage. However, in the majority of the cases, many plantations lack health services for their workers.

In Myanmar, companies make arrangements with the Social Security Board (SSB) for their employee health which mainly cover accidental insurance rather than a comprehensive insurance coverage. Under the SSB, employers contribute 3% and employees contribute 2% of base salary to a maximum of 300,000 kyats. All SSB listed employees can get free medical and hospital treatment from SSB-owned clinics and worker hospitals.

One company in Myanmar pays for the hospitalization and consultation fees for its permanent staff, including vaccinations. It also conducts tuberculosis screening in line with the government’s requirements for companies processing foodstuffs.

In Lao PDR plantation, doctor and nurses on-site will do medical consultations and diagnosis for workers’ health issues. The company also provides mosquito nets for workers staying in on-site camps. If the issue cannot be treated, the patient is transferred to the district or provincial hospital.

Provision of integrated services
A number of NGOs working with plantations (e.g., in Cambodia) have started to provide integrated services including LLIN distribution and malaria test and treatment service together with training on HIV prevention and condom use and for diarrhea. The plantations, in collaboration with government health centers invite health staff to do regular checks on workers and provide free immunization services. For other serious illnesses, workers are not insured and need to pay out-of-pocket for required health services.

In one company in the oil and gas sector in Myanmar, workers undergo pre-employment check-up for their employees and their family members including screening for malaria and dengue. The company provides inpatient and outpatient medical treatment plan for all employee and family members. Accidental insurance is renewable on a yearly basis. The company noticed that within a year, there was no submissions for malaria and dengue medical reimbursement to the company. No specific activities were included in their program (e.g., provision of LLINs, spraying or fogging, etc.). Other companies cover for hospitalization and consultation costs of permanent staff including vaccination. They also conduct tuberculosis screening as required by the government for companies producing food products.

In Thailand, transportation to health centers are provided for workers and LLINs are also provided by CSOs. IEC in various languages (e.g., Thai, Karen, Mon and Burmese) are also made available. Workers in the Thai-Myanmar border areas who contract malaria are taken to health posts or clinics and to the tropical disease center. Migrant workers are provided with bednets and IEC.

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We usually do out of good will and don’t expect particular incentives in return.

– Myanmar tour company

4.11. Motivators, enablers and incentives

Motivators
Productivity is the most frequently stated motivator for companies to invest in health. However, the productivity is selective for skilled workers, as unskilled workers are seen as easier to replace and transient. The absence of skilled workers is seen as having a major impact on productivity.

A Lao PDR plantation manager stated that health was a priority for the plantation due to suggestions from the company director.

Respondents in Lao PDR, Myanmar and Thailand cited charity as a motivator for their involvement in health programs. A plantation owner in Myanmar reported giving free health and livelihood seminars to communities not only near his plantations but elsewhere, as a form of “educational donation.”

A Myanmar tour company also stated that its motivation for participation in health/charitable efforts is “out of good will.” Similarly, a plantation owner in Thailand invested in the seasonal unskilled mobile migrant workers who periodically work in his farm, including finding employment and helping to finance the workers build houses. Another Thai plantation owner and key informant however stated
that while many Thai business people were charitable and donated generously to temples and religious orders, this might not be applicable to resource mobilization for malaria. Hotel managers in Lao PDR reported that their businesses were willing to participate in malaria efforts, as “it is common for hotels to contribute to social events or requests.” They also reported that hotels used to contribute cash to malaria programs.

**Enablers**

Respondents identified a number of enabling factors that the public sector can use to spur private sector involvement in malaria. The most common enabler was the government (both local and national) providing clear instructions on where the private sector can contribute. In addition, relevant information on the challenges at hand would enable the private sector to identify solutions and resources needed.

A Myanmar plantation owner stated that good governance would both motivate and enable companies to invest in malaria elimination programs. Proactive health centers that collaborate with businesses by providing relevant health information, rapid diagnostic tests (RDTs) and supplies such as repellents and LLINs were also identified as enablers. A plantation owner in Thailand reported that health posts can function only when they are properly staffed by local malaria volunteers, and that adequate incentives (such as compensation) were needed to attract and retain malaria volunteers.

**Incentives**

Respondents identified tax incentives and recognition awards as viable incentives to promote private sector involvement in malaria elimination.

Provision of tax incentives were cited by Cambodian private sector respondents. Respondents from Myanmar had similar response stating that the government can provide tax relief as there is no incentive structure in place as yet. Thailand cited tax relief for malaria involvement as a good incentive. Lao hoteliers stated that the government should consider reduced taxes or working with electricity companies to give lower prices for hotels participating in malaria elimination as incentives.

Non-monetary incentives in the form of awards were mentioned by Cambodian respondents similar to Children Safe Sponsor Award and other global awards. They stated that Ministry of Tourism, or regional or global entities can provide an award such as “Sponsors to Regional Malaria Elimination” award. This can be based on a point system or appropriate ratings for hotels as recognition that businesses are taking part in such efforts. Thailand tourism sector suggested giving a “malaria-free award” similar to the Green Hotel Award but stated that the award needs to come from a government agency and that the logo is more important than the name of the award. It could also be in the form of a regional award.

A respondent from Cambodia mentioned that the government can also motivate businesses through the land leasing process – it can provide a long lease (e.g., a 99-year lease) and stipulate for a certain percentage of the company's revenue to be spent on health.

One of the key enablers cited by a Lao PDR respondent is the issuance of government order or notice for the hotel sector to contribute and support malaria elimination efforts.

**4.12. Return on investment**

Most businesses interviewed did not measure their ROI in health in financial terms. Some companies reported that they used employee productivity to measure their ROI in health. Two Thai plantations that the CSOs with which they collaborate for the malaria programs measured the ROI. The measurements included LLIN distribution, malaria mapping, case referrals, community activities and IEC training.

Certain companies that invest in employee health are motivated by charity, and thus do not approach the matter from the ROI perspective.

**4.13. Resource mobilization**

Businesses already conducting CSR can be approached for charitable causes (e.g., Myanmar, Lao PDR and Cambodia). The general consensus is that the tourism sector will be willing to participate in voluntary charitable programs or make donations although targeted advocacy and appropriate information sharing will be required.

Across the three countries, it was common practice for the private sector to contribute to areas commonly affected by malaria and natural disasters. Respondents from the tourism sector also stated that tourists were inclined towards charity efforts including donations. Suggestions from Cambodia, Lao PDR and Myanmar ranged from donation boxes at hotels or airport locations, to holding charity seminars or events for business owners for cash contributions or in-kind contributions, along with sharing best practices and experiences. Donation boxes should
be placed at the front counter and well-marked with an official logo with a short paragraph explaining the purpose of the donation. Explanation on the box should also be multilingual. The logo will ensure confidence and trust with the tourists and clients from different countries.

Respondents also suggested taking advantage of regular events (e.g., the “Off Road Racing” biannual event in Lao PDR), as well as group tour visits by handing out fundraising stickers for malaria elimination.

Resource mobilization can be carried out through bookings (similar to UNICEF for Care, Support and Nutrition Program). Contributions can be made through transaction fees or by setting aside a portion of the profits from bookings. However, negotiations with business owners will be needed with clear roles and responsibilities towards building an effective PPP.

The Lao PDR tourism sector respondents mentioned that the government should issue instructions or notifications to hotels. Such documents should outline how to implement the campaign to eliminate malaria and how to make reasonable contributions either from commission fees and/or from profits. A letter from government officials to accompany the donation box will reinforce this message.

The Thai public health department is now focusing more on dengue, as case numbers have increased. In the last two years, dengue cases are higher than malaria.
– Thai plantation owner

4.14. Challenges

Dengue and Zika
The recent resurgence of dengue has placed it higher on the agenda of both the public and private sector. Most respondents along the Thai-Myanmar border stated that dengue was more serious an issue than malaria. This threatens to overshadow malaria and divert resources and attention away from malaria elimination efforts. A Thai plantation owner reported that the local health department was focusing more on dengue and Zika, due to increases in dengue cases and the global attention given to Zika. Another respondent stated that the local Department of Public Health was now focusing more on dengue than malaria due to a recent increase in cases, and as dengue affected children more than adults, which creates more concern.

I doubt that the argument to support elimination as a regional public good will stand out to corporate management, as health is not a priority for oil and gas companies.
– Myanmar oil & gas

Reprioritizations
Although the private sector has been engaged in CSR programs for malaria activities, the private sector in general is reprioritizing its resources to non-health activities. The oil and gas sector – a traditional private sector partner for health activities, along with plantation sector entities – have been losing interest in malaria due to the decline in recent global commodity prices. The slump in commodity prices has decreased resources available for CSR activities. In addition, the decline in malaria burden in project sites, private sector sponsored clinics and surrounding communities have rendered the disease invisible at the project operation and corporate leadership levels, prompting companies to redirect their CSR budgets and subsequent activities to other programs.

An oil and gas company in Myanmar and a Thai business association that have long invested in malaria are now reprioritizing towards NCDs, while a business association in Myanmar involved in malaria is now completely moving out of health. Health has generally not been an area that businesses are enthusiastic about, as it is not part of their core mission or objective.

Ethno-linguistic issues
Ethnic armed groups play a significant role in certain areas of Myanmar, especially along the border with Thailand. Some groups provide health services in the form of “ethnic health organizations”; these organizations bridge the healthcare gap in their catchment areas, which are often underserved by the government’s health infrastructure. A respondent in Myanmar with business operations near ethnic armed group controlled territories stated that public health programs such as vaccination campaigns have to be coordinated between the local government and ethnic armed groups. The ethnic groups also tend to use such public health programs to bolster their legitimacy within the local communities.

In many border areas in the GMS, local inhabitants speak different languages or dialects from the country’s main or official languages. This presents challenges in conveying health information and collecting data such as patient history and barriers to healthcare access. A plantation owner in Myanmar reported that local communities had difficulties in understanding key health messages, while two
key informants along the Thai-Myanmar border reported that health information materials have to be in various languages. In Lao PDR, a key informant reported that seasonal workers and ethnic minority communities have difficulty communicating with medical staff.

**Health challenges**

Access to health services is still an issue for many of the workers in plantation-sites across the GMS. For example, a respondent in Dawei, Southern Myanmar reported that although there is a local health subcenter, it is located about 5–10 miles from the plantation-sites. People living out in the underdeveloped Myeik archipelago had difficulties in obtaining healthcare and transportation for serious medical cases.

A plantation owner in Myanmar said that the remoteness of cases meant that it is very difficult for affected people to seek treatment. Another reported that many villages lacked medical staff, with most villagers self-treating their illnesses. Furthermore, health posts were lacking basic medicines. A key informant who works along the Thai-Myanmar border reported that there is a lack of RDTs and the health posts were offering inadequate services. The challenges are compounded by people from Myanmar crossing over into Thailand to seek medical treatment and medicines.

Net replacement is an issue with MMPs as they move from location to location, they often take their bednets with them resulting in insufficient bednets at work sites. In Lao PDR, a plantation owner reported that mosquito nets were given out to households every year. However, low literacy has resulted in misuse or non-use of the bednets.

Some of the malaria drugs were used to treat other diseases such as diarrhea, reducing the efficacy of the drugs and compounding to the challenge of drug resistance.

### Table 7. Comparisons between GMS report and report on Bangladesh, Indonesia and PNG

<table>
<thead>
<tr>
<th>Country Case Study</th>
<th>Greater Mekong Subregion</th>
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| **Malaria, dengue and other vector-borne diseases** | • Malaria identified as major health concern, but with low and declining cases  
• Dengue perceived as more pressing health issue  
• Tourism sector most sensitive to health issues  
• Traditional partners reprioritizing to other issues |
| **Labor force** | • Plantations have both unskilled and skilled labor  
• Unskilled workers: seasonal/daily, rarely live on-site; includes cross-border migrant workers; health status does not affect productivity  
• Skilled workers: full-time, live on-site; companies are more willing to invest in their health and welfare |
| **Return on investment** | • Interviewed companies do not measure an ROI in health in financial terms  
• Companies set indicator targets at beginning of each year for interventions and report progress against indicators  
• ROI measured against agreed performance framework  
• Some use lost-time accident rate  
• Quantifying ROI for malaria in pure economic terms may not be convincing  
• Value proposition linked to enhancing social license to operate |

### CSR and malaria interventions

- Private sector enterprises had varying CSR and malaria intervention activities; companies normally provide services as part of CSR or normal operational activities
- Insecticide spraying and awareness programs are most common interventions
- Larger companies have own clinics, on-site medical staff
- Companies in PNG most proactive in intervention
- Larger companies have more financial resources to conduct programs for employees and communities
- Country’s health insurance scheme affects companies’ ability to provide coverage to employees

- Traditional malaria partners (oil and gas, business associations) reprioritizing away from malaria to other health or non-health issues
- Most small plantations: bednet distribution and sending sick employee to health center

### Perceptions on private sector involvement

- Most want public sector to lead malaria elimination
- Companies in Indonesia also open to participation
- Private sector wants clear guidelines and instructions from the public sector
- Companies unwilling to conduct activities that overlap with government services
- Companies in PNG already actively involved in malaria; most CSR functions delineated to foundations

- Most want public sector to lead malaria elimination
- Companies across GMS open to participation
- Companies in Lao PDR are new to concept of private sector involvement but open to participation
- Need buy-in from local authorities (government, ethnic organizations, faith-based organizations, etc.)
- Clear guidelines and instructions from the public sector
- Companies in tourism sector willing to participate in fund raising

### Motivators

- Employee welfare and safety; productivity
- Guest welfare and safety is major driver for hotels
- The social license to operate

- Employee welfare and safety; productivity of skilled workers
- Charitable motivation

### Enablers

- Setting health as a corporate strategic sector
- Implementing partners are crucial enablers
- Committed company board (board composition or board members aware of importance of malaria elimination)
- Tax relief or tax credit

- Clear instructions and information from the government
- Good governance
- Proactive local health centers that provide information, RDTs and supplies
- Adequate incentives for local malaria volunteers so that health posts function properly

### Incentives

- Non-monetary incentives
  - Recognition awards
  - Certifications from regional or global level entities
- Monetary incentives
  - Tax schemes
  - Matching commitments
  - Co-financing arrangements

- Non-monetary incentives
  - Recognition awards/acknowledgement
  - Certifications from regional or global level entities
  - Favorable land leasing
- Monetary incentives
  - Tax schemes
  - Preferential utility rates
5. Cross-Sectional Analysis

The following section provides findings from the three sectors in the GMS as well as the findings from the Private Sector Business Case Studies in Bangladesh, Indonesia and Papua New Guinea (Table 7).

5.1. Plantation sector

Awareness is high for malaria and other vector-borne diseases across the GMS countries, which is also seen in the three case study countries. Access to health services varies. Large plantations in the GMS lack on-site health facilities, while those in case study countries tend to have on-site clinics. Thailand and Indonesia have wide-reaching national health insurance schemes that extend coverage to plantation workers.

Malaria is no longer seen as a major public health challenge, as cases have declined in recent years across the region. However, dengue is cited as a major concern for plantation owners across the GMS and also Indonesia, more so than malaria, which reflects the resurgence of dengue across Southeast Asia.

Unskilled workers are vulnerable to malaria, and employer perceptions of unskilled workers as illiterate or having socio-cultural barriers undermine malaria control efforts. In addition, linguistic barriers between the workers, plantation owners and local government hamper malaria activities such as BCC and IEC.

Cross-border MMPs play a much more prominent role in the GMS plantation sector, and are also a major population group for malaria implementation partners to focus on. The MMPs also occupy an important role in the GMS malaria elimination efforts. MMPs, including unskilled workers, tend to return to the same work site if there is a conducive working environment with good employment practices although this is an exception rather than the rule.

Plantation owners are more sensitive to the health situation of skilled labor and are more willing to invest in their health and welfare, as skilled workers are harder to replace and have greater effect on productivity. This is common across the GMS and the three case study countries. Due to the funding resources available in the region, including RAI, there is increasing engagement between plantation owners and CSOs in the GMS.

5.2. Oil and gas sector

In the past, the oil and gas sector was a very strong partner for engagement in malaria control and prevention activities. However, due to economic downturn (including a decline in oil and gas prices) and declining malaria cases, this traditional partner has become the least receptive sector for further engagement across the GMS, Indonesia and PNG. They are also reprioritizing their current health interventions towards NCDs and non-health issues such as women’s empowerment and income generation activities. An oil and gas company in PNG utilized its helicopters to run outreach programs to isolated communities.

Oil and gas companies also perceive health as not falling under the purview of their core businesses. Declining malaria cases also hamper attempts to make arguments to corporate leadership to remain committed. Argument of malaria elimination as a regional public good would likely fail to gain traction within the current low-endemic setting.

5.3. Travel and tourism sector

Across the GMS and two of the three case study countries, the tourism sector is the least aware yet most willing sector for cooperation on malaria elimination. Tourism associations are crucial platforms to engage with relevant tourism authorities and stakeholders, as they have the capacity to influence a larger number of businesses and to set industry standards and norms. In Cambodia, tourism associations are already involved in CSR activities, including for HIV.

The tourism sector lacks information on malaria and other health issues, as there is no communication by the health sector on such challenges. Respondents suggested concerted efforts to raise awareness of malaria during association or industry meetings in order to gain industry buy-in.

Malaria and other diseases are seen as directly affecting core businesses across the GMS and the case study countries. Similar to the plantation sector, dengue has been cited as a more pressing health concern in the GMS and in Indonesia.

Respondents from the GMS and Indonesia reported that they did not want to associate malaria with the tourism sector in the country, as it would present a negative image. However, they are more willing to support a regional initiative for malaria elimination efforts.
In addition to malaria and dengue, security and access issues arising in conflict affected zones and cross-border areas as a result of political instability play an important role in the tourism industry in the GMS.

There is existing infrastructure to inform or educate businesses in the travel and tourism sector on health and non-health challenges such as the arrangements for HIV, anti-sex trafficking and anti-child trafficking. ASEAN Tourism Association (ASEANTA) convenes such a coordination platform through tourism associations and travel agencies including development of manuals.

Chain brand hotels (e.g., AccorHotels Group, InterContinental Hotel Group and the Hilton Group) have the network to reach a large number of employees and clients for both IEC activities and resource mobilization. AccorHotels has a network of over 4,000 hotels and is involved in CSR programs on HIV and sex workers in Cambodia. It also holds employee training programs on an annual basis.

5.4. Regional models
In PNG, the Rotarians Against Malaria (RAM) played an important role in the distribution of bednets through its “Adopt a Village” program with funding from the Rotary Foundation, Australian Department of Foreign Affairs and Trade (formerly AusAID) and the Global Fund. In addition to this, RAM also have programs such as “Chasing Malaria” (mapping), “Malaria Awareness Day” (raising awareness) and “Healthy Village” (vector control) to address malaria.

5.5. Private sector perspectives
The private sector in both the GMS countries and the three case study countries stated that they wanted the public sector to lead any malaria elimination effort. They also wanted the government to provide guidelines and checklists on what the private sector can do.

Respondents generally saw malaria as a health challenge, but many perceive dengue as a more pressing health issue. Similar incentives were suggested by the respondents, such as tax breaks and recognition awards.

Companies have been affected by the decline in commodity prices in both their revenues and their budget for malaria activities. After a peak in 2011, most commodity prices have fallen sharply to levels similar to ten years ago (Figure 6a–6d). The global financial crisis and slowing economic growth in China has led to a worldwide decline in commodity prices that have greatly affected both states and companies. Companies facing lower profit margins, economic losses and stagnant growth prospects in addition to global political and security uncertainties are less willing to allot their funds. It has also caused already involved companies to reprioritize their commitments.

Figure 6a, 6b, 6c, 6d. Commodity prices from 2006–2016

- a. Palm oil, US$ per metric ton
- b. Rubber RSS3, US$ per kilogram

c. Brent crude, US$ per barrel

d. World sugar, US$ per kilogram

6. Recommendations

6.1. The public sector

The government can play a critical role in developing, implementing, and monitoring plans based on different private sector modalities for delivery. The government can support:

1. **Tax relief and tax credit schemes:** Tax relief or tax credit schemes will enable and also incentivize companies to commit more resources for malaria programs. Designating the foundation as an aid provider can exempt employees from paying income tax, which in turn can be diverted to expand signature programs of corporations or foundations. Some companies are already benefiting from tax credit schemes (e.g., mining sector in PNG).

2. **Non-monetary incentives:** National or local governments can incentivize companies to invest in health interventions including malaria by linking such undertakings to company expansion plans or diversification programs. Another avenue is for relevant ministries to confer awards in recognition of companies that meet guidelines or contribute to malaria elimination efforts. Such awards could be tiered, based on a points system. Government agencies or ministries can confer awards such as “Sponsors to Regional Malaria Elimination” award.

3. **Social licensing requirements:** For companies and foundations engaged in health programs, there is no guarantee that the companies will be present beyond their term, depending on the status of the social license. In order to maintain the interest of the private sector entities, social licensing issues can be extended for the companies involved in malaria and other broader health activities.

4. **Regulatory framework:** Large-scale companies will pay attention to regulatory issues, especially if it is within the government regulator’s checklist. Examples would be to conduct health impact assessments (HIAs), requiring companies to systematically address the assessment of outcomes and requiring companies to set aside a certain amount for CSR activities. Government provision of a checklist of activities for companies will enable the companies to comply with requirements.

5. **Encourage health checks for workers:** The government can encourage businesses operating in malaria endemic areas to undertake health check-ups for their employees. These health checks can be for both pre-employment (i.e., before an individual joins the worksite) and at regular intervals during the employment or contract period.

6. **Streamline access to healthcare:** The public sector can improve access to healthcare for communities in malaria endemic areas and remove barriers for MMPs. These could include increasing the number of health posts and health workers (e.g., community malaria volunteers who are trained for provision of integrated health services) and focusing on sustainability issues (e.g., compensation/incentive schemes).

7. **Promote public-private partnerships:** The government can emphasize the role of PPPs for malaria elimination through the development and implementation of PPP strategies that are sensitive to the perceptions and needs of the private sector. Such strategies should emphasize the roles and responsibilities of the partnership, the steps that will be undertaken to achieve the aims, and the timeframe in order to facilitate private sector buy-in. The public sector should also identify focal points that will oversee such partnerships, and link up the private sector to sources of innovative approaches and solutions including regional entities, research institutions and other local organizations.

The Cambodian Ministry of Health has developed a policy framework for PPPs in the health sector. The Technical Working Group for Health has a subgroup focusing on PPPs that provide support to service delivery, community-based health networks, health education and promotion activities, encouragement of community participation, operators of health equity funds, and community-based insurance schemes. This approach can be emulated across the GMS for malaria-specific PPP efforts linking these issues to universal health coverage.
6.2. Multilateral development banks and partners

1. **Provision of financing modalities:** Multilateral development banks and partners can provide financing opportunities including cross-sectoral financing for health programs incentivizing companies to invest in health interventions.

2. **Establishing closer linkages:** Chambers of commerce and trade unions are important in order to take advantage of periodic meetings that provide an opportunity to raise issues of concern.

3. **Standard operating procedures:** Influencing standard operational procedures for businesses have been suggested by the respondents from all three sectors. Specific checklists of malaria activities that businesses can use will be one of the more effective models for implementation and monitoring. Examples would include health screening of employees, what to do for suspected malaria cases, vector control activities and having standardized BCC and ICE programs.

4. **Regulatory framework:** Multilateral development banks can provide technical assistance to support governments improve regulatory framework in a number of areas including health, private sector development, insurance, etc. Large companies will also pay attention to regulatory issues, especially if it is part of the government’s regulations. Examples include conducting HIAs, requiring companies to systematically address the assessment of outcomes and requiring companies to set aside a certain amount for CSR activities. Development banks such as the ADB and others are already encouraging the inclusion of HIAs in development projects and providing HIA workshops for countries.

5. **Awards and recognition:** Companies that contribute to malaria elimination efforts – either through CSR or compliance with regulations – can be conferred awards in recognition of their activities. These can include awards, special mentions and acknowledgement, and can concurrently serve as non-monetary incentives for the businesses.

6. **Promote regional dialogues:** Multilateral development banks can also promote regional discussions on engagement with private sector (e.g., “the EU model”) in the GMS including sharing best practices and innovative solutions.

6.3. Regional entities

1. **Establishing closer linkages:** Chambers of commerce and trade unions are important in order to take advantage of periodic meetings that provide an opportunity to raise issues of concern.

2. **Leveraging on corporations and associations:** The Cambodian Hoteliers Association initiated the “Clear and Clean Program” with pooled volunteers to clean public spaces and markets in major tourist destinations in Cambodia. This association is part of the Private Sector Forum Working Group which operates under the Cambodian Chamber of Commerce. These associations can serve as an entry point to for private sector engagement for malaria activities.

The AccorHotels Group already runs its WATCH program for the sex work industry and also for HIV with annual employee training programs. These initiatives can be expanded to include raising awareness and other CSR activities directed at drug resistance and malaria elimination activities.

3. **Recognition:** Regional entities can confer awards (such as a “Sponsors to Regional Malaria Elimination” award) in recognition of companies’ contribution to the malaria elimination efforts – either through CSR or compliance with regulations. These awards can be given out by regional entities (e.g., APLMA), business associations (e.g., tourism associations, the ASEAN Business Club [ABC]) and industry gatherings (e.g., the ASEAN Tourism Forum) in conjunction with governments. Such awards could be tiered based on a points system.

4. **Promoting involvement of regional private sector networks:** Advisory networks such as the Mekong Business Initiative (MBI) focused on promoting business environment reforms and private sector development in the GMS region can play a critical role together with other regional platforms that link the public and private sectors. MBI focuses on enterprise development, commercial law, financial services, incubation and acceleration. Such networks can help ensure that the PPPs are able to meet their potential and contribute to realizing the elimination goal. Activities could also include supporting incubation of new and innovative approaches; commodity development; utilizing companies’ distribution networks and transportation (e.g., helicopters, trucks, boats, etc.) to deliver commodities to hard-to-reach communities; technology transfer; supply chain management; raising awareness; tapping into companies’ marketing departments or partnering with marketing companies to raise awareness on the challenges of malaria and drug resistance and to conduct BCC/IEC in malaria-endemic regions.

- **Re-engage business coalitions in the GMS:** The business coalitions in the region that have been traditionally involved in implementing programs for HIV/AIDS in the workplace are now diverting their programs to NCDs (e.g., Thai Business Coalition) or away from health issues to gender issues (e.g., Myanmar Business Coalition on Aid). There is an urgent need to re-engage
existing business coalitions focusing on health and other private sector partners to revitalize the regional platform and regional momentum towards achieving malaria elimination.

- **Engaging business and charitable foundations:** Foundations formed by companies and associations can play important roles in mobilizing resources from the private sector. Lessons learned and good practices from PNG, where foundations established by corporations are actively involved in addressing community issues could be provided as a reference point for foundations in the GMS to enter into the health sector.

- **Reaching out to new regional partners:** The Asia Pacific region has a number of business-oriented platforms that can be included to promote the involvement of the private sector. For example, the ABC is a leading platform that brings together leading business people from Southeast Asia to promote business integration in the context of the ASEAN economic community. Health can be proposed as an issue for the ABC to address as part of their business activities.

5. **Engaging ASEAN:** The ASEANTA covers the travel and tourism sector across the ten Southeast Asian countries including all five GMS countries. ASEANTA is already engaged in the health sector through its HIV, anti-sex trafficking and anti-child trafficking initiatives. Training and development of manuals for travel agencies and travel associations. ASEANTA could support the involvement of the tourism sector in malaria elimination efforts through meetings (e.g., ASEAN Sustainable Development Committee meetings, ASEAN Tourism Forum, etc.).
7. Conclusion

There is great potential for the private sector to be involved as a key partner in the region’s efforts to eliminate malaria. However, involving them will require re-engaging private sector entities to focus on integrated health issues including malaria and building partnerships that can address operational challenges and risks in order to improve program implementation at the country level.

Based on the interviews conducted across the GMS and in the three case study countries, businesses are more inclined to contribute in-kind to malaria elimination efforts. Governments, development banks, regional entities and partners have the opportunity to form PPPs that leverage in-kind assistance or contributions in terms of private sector’s capacity to deliver.

The private sector is explicit with its “ask” in wanting the government and public sector to take the lead in the regional effort against malaria with timelines, clarity of roles and responsibilities, standard operating procedures and compliance checklists, and specific deliverables. Such conditions would enable the private sector to leverage its resources, expertise and networks, and ensure that such partnerships deliver and are mutually beneficial. The private sector would also like due recognition for its contributions, and view such efforts as incentivizing their involvement. Awards, special mentions and accreditations that can be tiered based on points systems can be conferred by government agencies, national and regional entities.

The tourism sector in particular is the least aware of health activities and yet is the most receptive to collaboration and partnership for engagement in the health and malaria agenda. This is a window of opportunity to engage a new sector that is showing enthusiasm and willingness to cooperate in the climate of declining interest of other business sectors.

MMPs occupy a critical position in the region’s efforts to eliminate malaria. Businesses that employ MMPs or operate in areas where MMPs mainly settle or travel can be specifically approached for PPPs in order to narrow the gaps as much as possible.

Mobilizing the private sector will be crucial for the Asia Pacific region to realize its goal of eliminating malaria by 2030. The challenge is more pressing within the context of emerging drug resistance across the GMS. There is an urgent need to re-engage traditional private sector partners and explore new partners and sectors while also recognizing the distinct ways in which the private sector operates, as well as its perspectives and expectations on being involved in malaria elimination.
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**Databases**

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World Bank Open Data (http://data.worldbank.org/)

World Health Organization, Global Health Observatory (GHO) data (http://www.who.int/gho/database/en/)
Annex 1: Interview List

1. Cambodia

<table>
<thead>
<tr>
<th>Location</th>
<th>Sector</th>
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<tbody>
<tr>
<td>Phnom Penh</td>
<td>• Tourism sector (hotels)</td>
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<td></td>
<td>• Plantation sector (sugar)</td>
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<tr>
<td></td>
<td>• Restaurant and hoteliers association (Private Sector Working Group on Tourism)</td>
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<tr>
<td></td>
<td>• Cambodia National Malaria Program (CNM)</td>
</tr>
<tr>
<td>Siem Reap</td>
<td>• Tourism sector (hotels)</td>
</tr>
<tr>
<td>Oddar Meanchey</td>
<td>• Government (Department of Labour)</td>
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<tr>
<td></td>
<td>• Plantation sector (rubber)</td>
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</tbody>
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2. Lao PDR

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<tr>
<th>Location</th>
<th>Sector</th>
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<tbody>
<tr>
<td>Savannakhet</td>
<td>• Plantation sector (rubber, palm oil)</td>
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<td></td>
<td>• Tourism sector (hotels)</td>
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3. Myanmar

<table>
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<tr>
<th>Location</th>
<th>Sector</th>
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<tbody>
<tr>
<td>Yangon</td>
<td>• Plantation sector (tea)</td>
</tr>
<tr>
<td></td>
<td>• Tourism sector (airlines, hotels)</td>
</tr>
<tr>
<td>Dawei</td>
<td>• Plantation sector (rubber, palm oil)</td>
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</tbody>
</table>

4. Thailand

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<th>Location</th>
<th>Sector</th>
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<tr>
<td>Bangkok</td>
<td>• Tourism sector (hotels)</td>
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<tr>
<td>Kanchanaburi</td>
<td>• Plantation sector (rubber, palm oil)</td>
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<td></td>
<td>• Tourism sector (hotels)</td>
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Annex 2: Interview Guidelines and Questionnaires

1. Interview guidelines

Introduction: This questionnaire intends to garner suggestions and viewpoints from private sector respondents on involving the private sector for malaria elimination. The following questions will explore:

- How to promote the private sector investment in malaria
- Issues and challenges for private sector involvement
- Perspectives and recommendations from the private sector
- Issues in creating public-private partnerships
- Malaria and private sector responses, including corporate social responsibilities (CSR)
- Incentives and disincentives for the private sector investment in malaria
- How businesses with existing CSR or malaria programmes quantify the returns of their programmes

Target audience: The questionnaire is for owners and managers of businesses – both multinational and local, large corporations and small and medium enterprises (SMEs) – with operations in malaria endemic regions. The questionnaire will be used to develop business cases for private sector investment in malaria, including industry case studies illustrating best practices. The questionnaire will help garner a better understanding of the private sector’s perspectives on becoming involved in public-private partnerships for malaria elimination.

Malaria responses by private sector: Depending on individual businesses, there may or may not be health-related programmes for their workforce, families and communities (general and/or malaria-specific). Some entities may view such programmes as part of their corporate social responsibilities, while others may regard these as part of routine operations.

Target sectors: Plantations (rubber, tea, palm oil, coffee, etc.), oil & gas operations and tourism in malaria-endemic countries.

Attribution and consent: Respondents will be requested for verbal consent to participate in the questionnaires. Respondents will be informed that notes will be taken of their answers. Respondents will also be asked whether they wish to be identified or remain anonymous. If they wish to remain anonymous, the notes will not contain any information that will allow the respondents to be linked to specific statements.

Background: The next page is a brief background to help contextualise the INTERVIEWER with the malaria situation in the Asia-Pacific Region.

PowerPoint presentation: A PowerPoint presentation is included in the interview package. It is a brief background for the RESPONDENT. Printout may be provided to aid the interview process.

2. Background

Malaria is a major communicable disease targeted for elimination in the 21st century. In the Asia Pacific region, malaria is present in 20 countries with around 260 million people living in high-transmission areas. According to the World Health Organization, there were 2.14 million malaria cases and 44,000 malaria deaths in the region in 2015. The World Health Organization has set the goal of reducing malaria by 90% by the year 2030. Within the region, the Asia Pacific Leaders’ Malaria Alliance (APLMA) also aims to eliminate malaria by 2030 through its roadmap.

Malaria morbidity and mortality are declining across the region. However, drug resistant malaria – where the malaria parasites develop resistance to the front line antimalarial drugs – is on the rise and threatens the gains made to date. The Greater Mekong Subregion is the global hotspot for artemisinin resistance, and eliminating malaria is the best option to prevent the spread of drug resistance. If the APLMA malaria elimination roadmap is fully implemented, it will save more than a million lives and deliver US$300 billion in economic benefits.

The private sector – comprising multinational corporations, small and medium enterprises, and private health providers – is a crucial partner in the region’s pursuit of malaria elimination. The Private sector will play an important role in finding innovative solutions, mobilising resources, ensuring the coverage of hard-to-reach and mobile migrant populations, and implementing malaria elimination activities. It is believed that there is considerable potential for private sector entities as a crucial partner for regional malaria control and elimination, particularly for private companies whose work sites are often in remote, high-transmission areas and whose productivity is directly impacted by malaria incidence.
3. Questionnaire for plantation sector

(Note: Document modified from original. Answer spaces removed for space constraints.)

1. How big is your operation? How many employees are full time, and how many are part-time (for example, during harvest season)?

2. Where do your employees come from?

3. Do they stay on your farm/plantation?

4. What are the main health challenges of your employees? Is malaria an issue? What about dengue? Do you think these health challenges impact your productivity/profitability?

5. Do you provide health programmes or activities for your employees and their families?

   a. If YES, proceed to QUESTION 6

   b. If NO, proceed to QUESTION 11

6. What are the activities/arrangements? Does it include malaria-specific activities (such as providing bednets/long-lasting insecticide treated nets, information/education sessions, spraying of insecticides/fogging)?

7. What are the drivers for your business to conduct the health programmes?

8. What do you think are the issues or challenges confronting your business’s health programme?

9. Do you measure the impact/returns of your operation/business’s health programme? If so, how do you measure (financial, non-financial)?

(Proceed to QUESTION 12 and onwards)

Continued from QUESTION 5b

10. Why is your operation not involved in health programmes? What are the barriers/challenges?

11. What support does your business/operation need from local government to become involved in malaria programmes?

(Proceed to QUESTION 12 and onwards)

Continued from QUESTION 9/QUESTION 12

12. What can the government do to incentivise companies/businesses to conduct health programmes for their workforce? (e.g., legislation, tax relief)

13. We are looking at malaria elimination within the context of health security, due to the rise in drug resistant malaria, a dengue resurgence and the threat from Zika. Agriculture remains a major source of employment and contributor to national economies in the region. How can we get the agriculture sector on board to be a partner in addressing health security issues in the region?

Public-private partnerships are where businesses (“the private sector”) partner up with government departments (“the public sector”) to address pressing issues. These partnerships can be at local, national or global level, and are important components in the Asia-Pacific region’s efforts for controlling malaria and other communicable and NCDs.

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<tr>
<th>Agriculture sector</th>
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<tbody>
<tr>
<td>• Public-Private Partnership between the Malaysian State of Sabah and private rubber and palm oil plantations</td>
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<td>• Plantation malaria workers in Cambodia</td>
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<th>Other Sectors (Mining, Oil and Gas, Tourism, etc.)</th>
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<td>• AngloGold Ashanti Mining Company in Ghana</td>
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<td>• Marathon Oil Company in Equatorial Guinea</td>
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<td>• Oil Search Limited in Papua New Guinea</td>
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<td>• Total SA in Myanmar</td>
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<td>• Tourism levy in Zanzibar</td>
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<td>• UNITAID airline levies</td>
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</tbody>
</table>

14. Do you have any thoughts on how your business can contribute to eliminating malaria in your region or country? What would be the incentives for your business to invest in malaria elimination?

15. Is there any other information that you think we should know?

Thank you for your time in participating in our questionnaire. Your contribution is valuable to us.
4. Questionnaire for oil and gas sector
(Note: Document modified from original. Answer spaces removed for space constraints.)

1. How big is (are) your operation(s)? What is the breakdown of your on-site workforce (full-time, part-time)?
2. Where do your employees come from?
3. Do they stay on your project site?
4. What are the main health challenges of your employees? Is malaria an issue? What about dengue? Do you think these health challenges impact your productivity/profitability?
5. Do you provide health programmes or activities for your employees and their families?
   a. If YES, proceed to QUESTION 6
   b. If NO, proceed to QUESTION 10

6. What are the activities/arrangements? Is it part of your corporate social responsibility (CSR)? (That is, not just for employees, but also for surrounding communities) Does it include malaria-specific activities (such as providing bednets/long-lasting insecticide treated nets, information/education sessions, spraying of insecticides/fogging)?
7. What are the drivers for your operation to conduct the health programmes?
8. What do you think are the issues or challenges confronting your operation’s health programme?
9. Do you measure the return on investment of your operation’s health programme? If so, how do you measure (financial, non-financial)?
   (Proceed to QUESTION 12 and onwards)

Continued from QUESTION 5b

10. Why is your operation not involved in health programmes? What are the barriers/challenges?
11. What support does your business/operation need from local government to become involved in malaria programmes?
   Proceed to QUESTION 12 and onwards

Continued from QUESTION 9/QUESTION 12

12. Do you conduct any environmental and/or health impact assessments prior to commencing operations?
13. What can the government do to incentivise companies to undertake health programmes for their workforces? (e.g., legislation, tax relief, etc.)
14. Malaria is on the decline. This might prompt companies to divert their malaria programmes/malaria-related CSR activities elsewhere. At the same time, drug-resistant malaria is on the rise and this threatens the gains made to date as we have no second-line drug. How do we collectively convince senior management on continuing CSR commitments and becoming more involved in the malaria elimination agenda?

Public-private partnerships are where businesses (“the private sector”) partner up with government departments (“the public sector”) to address pressing issues. These partnerships can be at local, national or global level, and are important components in the Asia-Pacific region’s efforts for controlling malaria and other communicable and NCDs.

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<tr>
<th>Oil and Gas Sector</th>
<th>Marathon Oil Company in Equatorial Guinea</th>
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<td>Oil Search Limited in Papua New Guinea</td>
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<td>Pilipinas Shell Foundation in Palawan, the Philippines</td>
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<td>Total SA in Myanmar</td>
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<tr>
<th>Other Sectors (Mining, Plantation, Tourism, etc.)</th>
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<td>Public-Private Partnership between the Malaysian State of Sabah and private rubber and palm oil plantations</td>
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15. Do you have any thoughts on how your business can contribute to eliminating malaria in your region or country? What would be the incentives for your business to invest in malaria elimination?
16. Is there any other information that you think we should know?

Thank you for your time in participating in our questionnaire. Your contribution is valuable to us.
5. Questionnaire for tourism sector – airlines  
(Note: Document modified from original. Answer spaces removed for space constraints.)

1. How big is your operation? How many employees do you have?
2. What are the main routes of your airline? Is there a peak season?
3. Which ministries, government entities and other associations do your business collaborate with?
4. What do you see as the main health challenges in your line of work? Is malaria an issue? What about dengue? Do you think these health challenges impact your productivity/profitability?
5. Do you think the health status of the regions that your airline flies to affects your business’s productivity/profitability? (example, diseases deterring visitors from coming)
6. What activities do your business do to protect your staff, especially ground crew, from vector-borne diseases (e.g., Dengue, Malaria, Zika, etc)?
7. Tourism has been strongly affected by health issues – such as during the SARS epidemic – discouraging tourists from traveling to affected areas. Was your business affected by such?
8. We are looking at malaria elimination within the context of health security, due to the rise in drug resistant malaria, a dengue resurgence and the threat from Zika. At the same time, global and regional travel is increasing. Visitor arrivals in the Asia-Pacific region has an average annual growth rate of 6.2% and reach 660 million by 2018. How can we get the aviation, travel and tourism sector on board to be a partner in addressing health security issues in the region?
9. Do you have any thoughts on how your business can contribute to eliminating malaria in your region or country? What would be the incentives for your business to invest in malaria elimination?

Tourism-related businesses around the world are involved in charitable activities for various causes.

<table>
<thead>
<tr>
<th>Hotels</th>
<th>Airlines</th>
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<tr>
<td>Hilton's HHonors programme</td>
<td>UNITAID’s Air Ticket Solidarity Levy</td>
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<tr>
<td>InterContinental Hotel Group</td>
<td>Cathay Pacific and Unicef’s “Change for Good”</td>
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<td>Starwood Hotels’ Check Out for Children</td>
<td>The Emirates Airline Foundation</td>
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<td>Solidarity AccorHotels</td>
<td>Air-mile Donation Programmes</td>
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<td>BookDifferent by Booking.com</td>
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<td>Hotels for Hope</td>
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10. As somebody who has been working in the industry, can you give us ideas and suggestions on ways to generate charitable giving and/or voluntary donations?
11. Do you think businesses in the aviation, travel and tourism sector will be willing to participate in voluntary charitable programmes that raise funds through bookings and transactions? (such as asking guests for a contribution, or allocating a portion of the business’s commission fees/profits)
12. Based on experience with your clientele, do you think travellers will be receptive of such a charitable giving initiative?
13. What would you suggest are good incentives for encouraging both travellers and businesses to participate in such initiatives?
14. Within the line of your work, how do you think we can raise awareness about malaria elimination?
15. Is there any other information you think we should know?

Thank you very much for your time in participating in our questionnaire. Your contribution is valuable to us.
6. Questionnaire for tourism sector – hotels  
(Note: Document modified from original. Answer spaces removed for space constraints.)

1. How big is your operation? How many employees do you have?
2. What is the average occupancy rate? Is there a peak season?
3. Which ministries, government entities and other associations do your business collaborate with?
4. What do you see as the main health challenges in your line of work? Is malaria an issue? What about dengue? Do you think these health challenges impact your productivity/profitability?
5. Do you think the health status of your business’s surrounding region affects your business’s productivity/profitability? (example, diseases deterring visitors from coming)
6. What activities do your business do to protect your hotel guests from vector-borne diseases (e.g., Dengue, Malaria, Zika, etc.)?
7. Tourism has been strongly affected by health issues – such as during the SARS epidemic – discouraging tourists from traveling to affected areas. Was your business affected by such?
8. We are looking at malaria elimination within the context of health security, due to the rise in drug resistant malaria, a dengue resurgence and the threat from Zika. At the same time, global and regional travel is increasing. Visitor arrivals in the Asia-Pacific region has an average annual growth rate of 6.2% and reach 660 million by 2018. How can we get the tourism sector on board to be a partner in addressing health security issues in the region?
9. Do you have any thoughts on how your business can contribute to eliminating malaria in your region or country? What would be the incentives for your business to invest in malaria elimination?

Tourism-related businesses around the world are involved in charitable activities for various causes.

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<td>(Mining, Oil and Gas)</td>
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<td>Total SA in Myanmar</td>
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In addition, other business sectors are also involved in controlling malaria.

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<tr>
<th>Other Sectors</th>
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<tr>
<td>UNITAID’s Air Ticket Solidarity Levy</td>
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10. As somebody who has been working in the industry, can you give us ideas and suggestions on ways to generate charitable giving and/or voluntary donations?
11. Do you think businesses in the tourism sector will be willing to participate in voluntary charitable programmes that raise funds through bookings and transactions? (such as asking guests for a contribution, or allocating a portion of the business’s commission fees/profits)
12. Based on experience with your clientele, do you think travelers will be receptive of such a charitable giving initiative?
13. What would you suggest are good incentives for encouraging both travelers and businesses to participate in such initiatives?
14. Within the line of your work, how do you think we can raise awareness about malaria elimination?
15. Is there any other information you think we should know?

Thank you very much for your time in participating in our questionnaire. Your contribution is valuable to us.