

Malaria in the Asia-Pacific: The role of the private sector in ensuring equity and access to services

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Karen Bulsara
Elizabeth Onyango
Graham Root

Montrose International

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The Australian Government is hosting the Malaria 2012: Saving Lives in the Asia-Pacific conference in Sydney, Australia from 31 October to 2 November 2012. The conference aims to reinvigorate progress in malaria control and elimination in the Asia-Pacific region and to agree actions to urgently tackle resistance to artemisinin. The Australian Agency for International Development (AusAID) has commissioned five thematic papers to inform presentations and discussions during the conference.

The analysis in these papers examines progress to, and efforts needed to achieve the goals set by the global malaria community including the long term aim of malaria elimination. The papers look at how and what is needed to accelerate progress to achieve a 75 per cent reduction in malaria deaths and cases by 2015 over a 2000 baseline, agreed by the World Health Assembly in 2005 and re-confirmed in 2007.

The five papers in the series are:

1. ***Malaria in the Asia-Pacific: burden, success and challenges*** which summarises the current burden, successes and challenges in malaria control and elimination in the Asia-Pacific region and discusses the major policy implications for countries and regional development partners.
2. ***Malaria in the Asia-Pacific: Challenges and opportunities for sustainable financing*** describes some of the challenges facing the region as it moves towards greater regional self-sufficiency in financing malaria control and elimination.
3. ***Malaria in the Asia-Pacific: Challenges and opportunities for access to quality malaria medicines and other technologies*** summarises the key issues and challenges to improving quality and access to malaria medicines and commodities in the Asia-Pacific region, and highlights reducing the risk of artemisinin resistance.
4. ***Malaria in the Asia-Pacific: Modelling the current and potential impact of artemisinin resistance and its containment*** describes the global impact of artemisinin resistance should artemisinin combination therapies and artemisinin monotherapies lose their effectiveness. The paper also focuses on the health, economic and development impact of increased levels of artemisinin resistance in the Asia-Pacific region.
5. ***Malaria in the Asia-Pacific: The role of the private sector in ensuring equity and access to services*** provides an overview of the private sector operating in malaria in the Asia-Pacific region and describes key challenges and opportunities for engaging the private sector, including best practice from the region and elsewhere.

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Acronyms

ACT	Artemisinin-based combination therapy	IDP	Internally displaced people
AMFm	Affordable Medicines Facility for malaria	IEC	Information, Education and Communication
AMT	Artemisinin-based monotherapy	IMCI	Integrated Management of Childhood Illness
ANC	Antenatal Care	INGO	International non-governmental organisation
APMEN	Asia-Pacific Malaria Elimination Network	IRS	Indoor Residual Spraying
AusAID	Australian Agency for International Development	ITNs	Insecticide Treated Nets
BCC	Behaviour change communication	LLIHN	Long lasting insecticide treated hammock nets
BMGF	Bill and Melinda Gates Foundation	LLINs	Long lasting insecticide treated nets
BP	British Petroleum	LLITKs	Long Lasting Insecticide Treatment Kits (for nets)
CBO	Community based organisation	M-TAP	Malaria Taxes and Tariffs Advocacy Project
CSO	Civil society organisation	M4P	Making markets work for the poor
DALY	Disability adjusted life year	MMA	Myanmar Medical Association
DFID	UK Department for International Development	MMV	Medicines for Malaria Venture
DHS	Demographic and Household Survey	NDOH	National Department of Health
EAP	East Asia-Pacific region	NGO	Non-governmental organisation
EPI	Expanded Program on Immunization	NMCP	National Malaria Control Program
FBO	Faith-based organisation	OOP	Out of pocket expenses
FHI	Family Health International	PacMI	Pacific Malaria Initiative
FMCG	Fast-Moving Consumer Good	PacMISC	Pacific Malaria Initiative Support Centre
GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria	PDP	Product Development Partnership
GMAP	Global Malaria Action Plan	PNG	Papua New Guinea
GP	General Practitioner	PPP	Public Private Partnership
GPARC	Global Plan for Artemisinin Resistance Containment	PR	Principal Recipient
HIV	Human Immunodeficiency Virus	PSI	Population Services International

QDSTM	Quality Diagnosis and Standard Treatment of Malaria by Private General Medical Practitioners	SPH	Sun Primary Health
		SQH	Sun Quality Health
		STI	Sexually transmitted infection
R&D	Research and Development	TB	Tuberculosis
RBM	Roll Back Malaria	THE	Total Health Expenditure
RDT	Rapid Diagnostic Tests	UNICEF	United Nations Children's Fund
SE Asia	South East Asia	US\$	United States dollars
SEARO	WHO South East Asia regional office	URC	University Research Company
SP	Sulfadoxine-pyrimethamine	VMW	Village Malaria Worker
		WHO	World Health Organization

Executive Summary

Key messages

1. Strong and sustained engagement with the private sector is essential to reach the target of a 75 per cent reduction in cases and deaths by 2015. The private sector already makes a significant contribution to malaria prevention, diagnosis and treatment in the Asia-Pacific region, and will continue to be an important partner in malaria control efforts in the future.
2. In South Asia, around 80 per cent of health care for poor people is provided by the private sector.¹ Partnerships between the public and private sectors have helped to reduce the cost of essential malaria medicines. Companies engaged in forestry and mining often have direct access to mobile and migrant populations at high-risk of contracting malaria, who are often beyond the reach of the public sector.
3. Engaging the private sector is not without its challenges. The cost of private care may deter the poor from seeking treatment, or impoverish them if they do. In countries where the capacity to regulate medicines supply is poor, many private providers sell low-quality medicines, or treatments such as artemisinin monotherapies, which are banned in some countries. Prescribing practices may also be poor. This contributes to emerging resistance to malaria medicines in the region.
4. More strategic engagement with the private sector is therefore needed. This should aim to

tap new resources and optimise private sector strengths such as reaching remote 'markets'. Increasing the affordability and quality of services provided in the private sector is also important.

5. To achieve this, governments need to:

Regulate the private sector better, more efficiently and consistently, to improve access to quality malaria products and services.

Build the evidence base on where the private sector has been effective and delivered results in malaria control. This will allow malaria programs to select the most appropriate strategies for engaging the private sector in their context.

Harness private sector financing for malaria, particularly in the Asia region. It is crucial, however, that governments have the capacity to regulate and manage these resources.

Capitalise on opportunities to establish public-private partnerships, for example with natural resource and agricultural industries, to implement malaria control programs. Such partnerships should engage and support local health authorities, and be carefully planned in order to remain sustainable.

Bring the private sector into regional fora. This is key to increasing engagement between public and private sectors and building trust. It should also help to better define the role of the

¹ AusAID Thematic Strategies: Sustainable Economic Development - Private Sector Development, AusAID 2012.

private sector in key areas, such as reaching remote and mobile populations and combatting the sale of sub-standard medicines.

Overview

This paper looks at the significant role that the private sector plays in malaria control in the Asia-Pacific region, and how it can be better harnessed to achieve increased and more equitable access to malaria services.

The term 'private sector' is used to include a diverse range of health care providers: from formal groups of health professionals and commercial companies of various sizes; large healthcare and workplace programs run by major corporations; to civil society groups and informal providers such as unqualified medicine sellers and shopkeepers.

The role of the private sector

In the Asia-Pacific region, the private sector health market is large and vibrant. Despite having to pay, many people choose to access malaria services through the private sector. This is due to, for example, a greater variety of providers, better availability of products, and a perception that goods and services are of higher quality compared to the public sector.

Yet, while the private sector can improve access to services, particularly where the public sector is weak, it is no magic bullet. Paying for health care can impoverish households. Key populations at-risk of malaria may remain neglected. Also, the quality of services, medicines and other technologies provided in the private sector can be poor. To address these issues, governments need to engage more strategically with the sector.

The capacity and reach of the private sector is not uniform across the region. It plays a particularly large role in providing services to the general population in Southeast Asia, Central Asia, and India, but has a mixed or more limited role in other

countries. However, since private sector data is rarely included in official statistics, there is limited evidence of the exact scale of its contribution.

A range of strategies for engaging the private sector have been implemented in the region, and successes have been documented. For example, market-based incentives, such as subsidising the costs of long lasting insecticide treated nets, have been applied to keep the cost of essential malaria commodities affordable, thereby stimulating demand. Formal provider associations have been successfully encouraged to self-regulate. Public-private partnerships have helped to bring innovations in malaria medicines and other technologies to the market. Consumer empowerment initiatives and behaviour change communication campaigns have been implemented.

Challenges

To harness the full potential of the private sector, a number of crucial challenges must be addressed. A key issue is that governments have had limited capacity (or will) to regulate private sector markets. This is urgently needed to address, for example, the patchy availability of quality medicines for malaria, the proliferation of substandard or fake medicines, poor prescribing practices and high prices in the private sector.

National malaria control programs need to better understand the nature, role and scale of the private sector's (potential) contribution. There are knowledge gaps on how private markets work, which make decision-making difficult. For example, the cost-effectiveness of interventions delivered by the private sector is under-researched, and malaria treatment practices by informal providers are not fully understood. Little is known about how supplier behaviour affects prices for the consumer, despite the evidence that retailers have an important influence on the availability, quality and price of malaria products.² This will require

² Patouillard, E. et al., 'Retail sector distribution chains for malaria treatment in the developing world: a review of the literature' *Malaria Journal*, 2010.

collecting data nationally, analysing distribution chains in all sectors, as well as taking into account consumer demand.

Sustainable financing is another important issue. There are a wide range of non-state funding sources that can be better tapped for malaria control in the region, including global funding mechanisms. But making these work in a sustainable manner relies on sustained political engagement, as well as the capacity of institutions (locally, nationally and regionally) to regulate and manage financing partnerships effectively.

Opportunities

While these challenges are not unique to the region, opportunities related to the potential contribution of the private sector are. Asia, in particular, has a burgeoning private sector whose resources remain largely untapped. The presence of natural and energy resources in the region also presents an opportunity. Companies in these industries often operate in remote locations, which are beyond the reach of public services. They are therefore well placed – operationally, logistically and financially – to extend the health care they provide to employees and their families, who represent some of the most vulnerable groups at risk of malaria. This is already happening in

some countries with established natural resource industries. Experience suggests that developing positive relationships with communities and governments is key to success and sustainability.

Existing regional malaria efforts and fora provide further opportunities to pool resources for the procurement of medicines and technologies, and share knowledge. New regional efforts could focus specifically on best practices for engaging the private sector in malaria control.

In conclusion, in a climate of limited funding, strategic engagement with the private sector provides malaria control programs with both an *opportunity* and an *obligation*. There is an *opportunity* to widen access, improve quality and reduce costs of malaria interventions, through a variety of approaches. However, the private sector cannot be considered a panacea. There is also an *obligation* to actively engage with the private sector at sub-national, national and regional level to plan and design programs which ensure equity for poor and marginalised communities across the Asia-Pacific region.

1. Introduction

In recent years, increasing attention has been paid to researching the cost-efficiency and equity of health services delivered by the private sector. Much of this research indicates that while the role and function of the private sector varies substantially from country to country, and even within a single country, in the Asia-Pacific region, private providers typically play a significant role in malaria prevention, diagnosis and treatment. In Cambodia for example, first treatment was sought from private sector providers in 90 per cent of fever cases, while in Lao, initial treatment was sought in the private sector in 63 per cent of fever cases.^{3,4}

To increase and sustain the substantial gains made in malaria control in the Asia-Pacific region, malaria control programs need to understand the nature, role and scale that the private sector can and in many cases does play. The comparative advantage of using the public, private or civil society channels for delivering malaria control activities need to be considered by malaria program managers. Whilst private sector providers can improve access to services, particularly where the public sector is weak, it offers no magic bullet. Many individuals, particularly the poor, make out-of-pocket (OOP) payments on health care as a result of illness, which can be an important determinant of household impoverishment.⁵ This is a situation which has obvious negative consequences on equity and which can be addressed through

strategic engagement with the private sector. This paper considers various strategies to engage with private sector stakeholders for malaria control, providing examples of such programs in the Asia-Pacific region in order to highlight key issues, challenges and opportunities.

Montrose International was commissioned by the Australian Agency for International Development (AusAID) to undertake a desk-based literature review. Published papers, project evaluations and other program documentation were sourced through search engines and author-gathered project reports. It should be noted that the review only considers examples within the Asia-Pacific region, and not sub-Saharan Africa. The report is structured as follows: Section 2 provides definitions and a brief overview of the private sector in the Asia-Pacific region; Section 3 considers priority target groups and how the private sector can contribute to serving them; Section 4 presents possible and existing private sector engagement strategies; Section 5 considers key issues, challenges and opportunities in engaging the private sector and Section 6 concludes the report.

³ Yeung, S. et al., 'Access to artemisinin combination therapy for malaria in remote areas of Cambodia', *Malaria Journal*, 2008.

⁴ Nonaka, D. et al., 'Public and private sector treatment of malaria in Lao PDR', *Acta Trop*, 2009.

⁵ Montagu, D. et al., *The Private Sector and Health Services Delivery in the EAP Region*. (UNICEF Report, 2010).

2. Definitions and brief overview of the private sector in the Asia-Pacific region

The private sector plays an important role in the prevention, diagnosis and treatment of malaria in many countries in the Asia-Pacific region. Despite having to pay OOP, many choose to access malaria services through the private sector for a variety of reasons. These include a greater variety and availability of providers; lower financial and opportunity costs; greater flexibility and a perception of higher quality than in the public sector.

2.1 Private sector categories

The private sector is diverse and complex. Furthermore, the boundary between the public and private sectors is not always clear and there can be significant overlap between them, in some cases leading to a 'marketisation' of health services.⁶ The Chinese government, for example, charges fees to users at health facilities, and uses profits to augment health worker income. This dual practice can create close connections between the two sectors and may provide opportunities for reaching private sector providers while ensuring public health priorities are understood. The main categories of private sector stakeholders involved in malaria control are:

- **Formal private health care providers** providing a range of malaria treatment services. This group includes large and small commercial companies and groups of health professionals. Services they provide include hospitals; maternity homes; clinics run by doctors, nurses, midwives and
- paramedical workers; diagnostic facilities and pharmacies. These providers are often located in urban or peri-urban areas.
- **Informal private health care and general private retailers** providing limited malaria diagnosis, a variety of treatment options and bed nets. They include unqualified static and itinerant medicine sellers, drugstores, traditional healers, shop keepers, market stallholders, mobile hawkers and general stores. They are often located more widely in peri-urban and some rural locations and therefore have a wider reach than the formal private sector.
- **Civil society** groups provide services in addition to acting as intermediaries between government and private sector providers, acting in a monitoring and accountability role for the selling of nets and artemisinin-based combination therapies (ACTs), for example. Some non-governmental organisations (NGOs) have variable geographical coverage. However, social marketing and social franchising programs, providing subsidised malaria products and services through private sector providers and retailers, have a much wider geographical reach.
- **Private sector companies**—investment in health care and workplace health programs by major corporations, particularly the natural resource and agricultural industries. These companies provide malaria interventions for

⁶ Mills, A. et al., 'What can be done about the private health sector in low-income countries.' *Bulletin of the World Health Organization*, 2002.

staff within the company, as well as frequently for communities in surrounding areas. These are often located in areas of high malaria transmission and so serve at-risk population groups, including outdoor mobile workers.

2.2 Brief overview of the private sector in the Asia-Pacific region

The capacity and role of the private sector is not uniform across the Asia-Pacific region. Whilst there is insufficient data measuring the total number of private providers, national health surveys which capture data by surveying users, although limited, is considered the best information available to

measure the significance of the private sector in the provision of health care.⁷ The proportion that countries spend on health through the private sector as a percentage of total health expenditure (THE) varies greatly (see Table 1). The increased use of cost sharing mechanisms, the marketisation of health care and the rise of private practice have led to a shift in the proportion of health care costs paid for by citizens. The difference in OOPs between countries can be seen in Table 1. Because of the large burden of health care costs on families, especially in a number of countries in South and South East Asia, there is a need to ensure that the private sector is providing quality services at affordable costs in order to ensure equity.

Table 1: Total Health Expenditure (THE) in selected countries in the Asia-Pacific region⁸

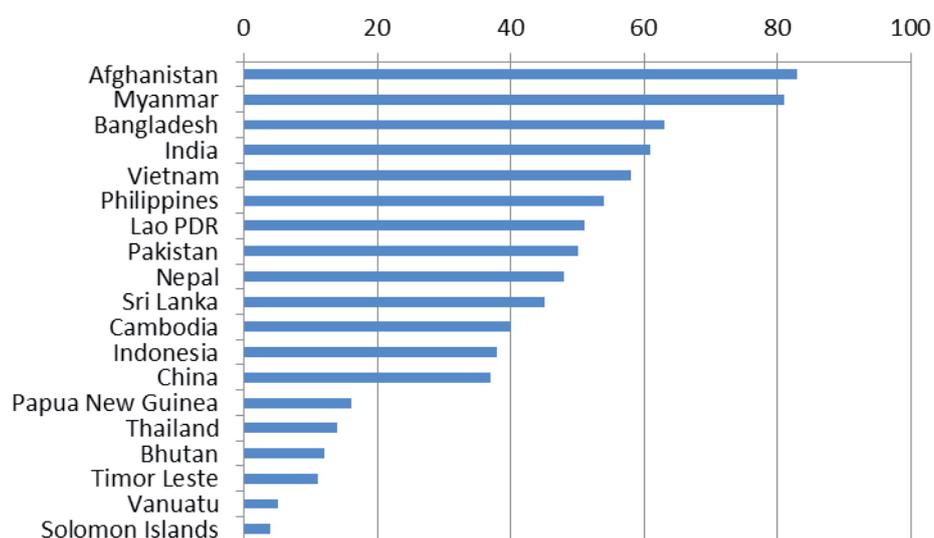
	THE as % of GDP	Govt Exp as % of THE	Ext Res as % of THE	Pvt Exp as % of THE	OOP as % of Pvt Exp	OOP as % of THE
Afghanistan	8	12	32	88	94	83
Bangladesh	4	34	8	66	97	63
Bhutan	5	87	11	13	91	12
Cambodia	6	37	24	63	64	40
China	5	54	<	46	79	37
India	4	29	1	71	86	61
Indonesia	3	49	1	51	75	38
Lao PDR	4	33	15	67	77	51
Myanmar	2	12	9	88	92	81
Nepal	5	65	12	65	83	48
Pakistan	2	38	5	62	82	50
Papua New Guinea	1	72	24	28	56	16
Philippines	1	35	1	65	84	54
Solomon Islands	9	93	32	7	54	4
Sri Lanka	3	15	3	55	81	45
Thailand	1	75	<	25	56	14
Timor Leste	9	56	34	44	26	11
Vanuatu	5	91	23	9	57	5
Vietnam	7	38	3	62	93	58

Key: THE= Total Health Expenditure; Ext Res= External Resources; Pvt Exp=Private Expenditure (which is money spent on health by sources other than the government or donors); OOP=Out of Pocket Expenditure.

⁷ Montagu, D. et al., 'The Private Sector and Health Services Delivery in the EAP Region', *UNICEF Report*, 2010.

⁸ WHO, *National Health Accounts* (WHO, 2010).

Figure 1: Out of pocket payments as a percentage of Total Health Expenditure⁹



The countries of the Asia-Pacific region have been categorised into five groups, with varying roles for the private sector:

- **Group 1 - South East Asian countries - Large role for the private sector**

- › *Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Thailand, Vietnam.* The private sector typically provides the majority of all health services. Health care provision by the for-profit private sector is much larger than by NGOs. Myanmar's OOPs are by far the highest in the region.

- **Group 2 - Central Asian countries - Large role**

- › *Afghanistan and Pakistan.* The private sector is used extensively in these fragile states. In Afghanistan, the private sector expanded rapidly during a time of conflict and is largely responsible for the very high OOPs. These services are generally concentrated in urban areas, not well organised, largely unregulated, and providing poor-quality care.¹⁰

- **Group 3 - South Asian Countries - Mixed role**

- › *Bangladesh, Bhutan, India, Nepal and Sri*

Lanka. The private sector certainly has a large role in India and Bangladesh, but Bhutan's OOPs are low and reflect lesser use of the private sector.

- **Group 4 - Pacific Island Countries - Small role**

- › *Papua New Guinea (PNG), Solomon Islands, East Timor, Vanuatu.* The private sector is small, providing less than half of health services, the bulk of which is provided by NGOs (particularly faith-based organisations [FBOs]). OOP as a percentage of THE is low. Corporate provision of health care tends to occur in the context of social investment programs and is particularly notable in PNG with regards to the mining and oil and gas industries.

- **Group 5 - North East Asian Countries - Limited role**

- › *China.* The private sector exists in specialty areas such as dental care and private hospitals. These are mainly in commercial cities and within structural arrangements where the government is an active partner.

⁹ WHO, *National Health Accounts* (WHO, 2010).

¹⁰ Sabri, B. et al., 'Towards sustainable delivery of health services in Afghanistan: options for the future', *WHO Bulletin*, September 2007.

3. Target populations

As seen in Section 2, the private sector is mainly accessed by the general population in the countries in groups 1, 2 and 3, with a more limited role for the private sectors in the countries in groups 4 and 5. When considering how to engage most effectively with the private sector in these countries, consideration of the most relevant target groups is also necessary. Due to the epidemiology of malaria in the Asia-Pacific region, containment and elimination requires a focus on those most likely to be exposed to mosquitoes which rest and bite outdoors. This requires an analysis of the behavioural risk factors which affect specific population groups in the high transmission forest and border areas, most notably outdoor workers and migrants. This is a particular problem in South East Asia where around two million people are estimated to be migrating annually.¹¹ The precise mapping and quantification of different target audiences in each region will help to determine which private sector interventions are most cost-effective in reaching them. The private sector may not always be the most cost-effective way to deliver malaria services. Retail channels optimally cover as large a geographic area as possible in order to generate economies of scale whilst also being commercially viable. Therefore targeting only certain parts of a country (for example, only border areas), as required by some malaria programs, may be less efficient through private sector retailers than through national distribution channels. This

was a finding that emerged from the project in Cambodia which implemented a net bundling strategy (see Annex 1, Case Study 3). In addition, new prevention product development is essential; since long lasting insecticide treated nets (LLINs) only offer indoor protection, alternative prevention tools, such as hammock nets and repellents, must also be considered for these mobile groups.

A review of the target groups most at risk of malaria (see Annex 2), including both stable and mobile groups, highlights the groups that can be reached by private sector interventions. The mobile groups which can be reached by the private sector are classified as: employer-affiliated groups of semi-mobile employees, extractive industry and seasonal farm workers; government-affiliated groups made up of the police, soldiers and border guards; and the most difficult to reach—non-affiliated groups of labourers, new settlers, migrants and highly mobile workers.

Private sector strategies targeting employer-affiliated groups, such as semi-mobile employees working in the extractive industries and seasonal farm workers, offer high potential for public-private partnerships (PPPs), particularly in mining, oil and gas industries, infrastructure projects such as hydroelectric dam building and agriculture, such as rubber and palm oil plantations.

¹¹ WHO Report, *Second International Task Force Meeting for the Strategy for the Containment of Artemisinin Tolerant Malaria Parasites in the South-East Asia Project*, (WHO, 2010a).

4. Private sector malaria interventions

Having identified a role for the private sector in reaching specific target groups, an assessment can be made of the strategies available, in order to determine those which would be most effective in a given context. Many private sector strategies have been, and are being, implemented in the Asia-Pacific region, making valuable contributions to accelerate progress towards the global target of a 75 per cent reduction in malaria cases and deaths by 2015. However, the available evidence on the scale of this contribution is scant and unrepresentative because private sector data is rarely included in national censuses or statistics.¹²

A framework table summarising private sector engagement strategies is adapted in Table 2. This table is based on two analyses and has been adapted to be of relevance to malaria programming.¹³ This framework can be used as a planning tool to assist decision-makers in establishing the extent of private sector engagement at the national level. The framework includes examples from the region, while Annex 1 contains further details on the case studies cited.

The strategies are divided into four primary approaches:

- 1. Market-based approaches**, including market-based incentives; marketing mechanisms;

and organisational collaboration. Civil society organisations (CSOs), such as those involved in social marketing play an important role, acting as intermediaries between public and private sectors in order to harness the private sector's retail capacity. Opportunities exist for regional PPPs to target high risk mobile populations across borders as exemplified, for example, with the Gates Foundation-funded, multi-partner 'Containment Project' which is taking place on the border between Cambodia and Thailand.¹⁴ Extractive industries are present in most countries and have significant potential for major transformational impact. In order to leverage this potential effectively and equitably, it is important that appropriate public financial management and regulatory and legal frameworks are designed and enforced. Fostering pro-poor business models, such as the 'making markets work for the poor' (M4P) approach, which has been utilised in Thailand and Vietnam for agricultural supply chains but not yet for health in the Asia-Pacific region. M4P is an example of an overarching approach that guides the assessment of market systems, planning for the future and acting to bring about change. These approaches can drive economic development in a way that contributes to poverty alleviation and achievement of malaria control targets.

¹² Ahmed, S. et al., *Analysing relationship between the state and non-state health care providers, Asia and the Pacific*, (Health Policy & Health Finance Hub. University of Melbourne, 2011).

¹³ Ahmed, S. et al., *Analysing relationship between the state and non-state health care providers, Asia and the Pacific*, (Health Policy & Health Finance Hub. University of Melbourne, 2011), and Montagu, D. et al., *The Private Sector and Health Services Delivery in the EAP Region*. (UNICEF Report, 2010).

¹⁴ WHO, 'Artemisinin-Resistance Containment Project', WHO [web page] <http://www.who.int/malaria/diagnosis_treatment/arc/en/index.html>.

2. Legal and administrative approaches,

including regulation and training. Engaging the private sector can facilitate a more inclusive and comprehensive approach to malaria control and strengthen existing health services, but not unless there is recognition at the highest political levels that the private sector is a vital partner in malaria control. Advocacy is needed at both the international and national levels to create, resolve and promote awareness of the potential gains from greater private sector engagement. Social franchising has shown itself to play a vital role in improving quality standards and treatment practices through medical detailing and training amongst its private provider networks. These approaches have significant potential, since governments are unable to regulate the informal sector, and can therefore act to fill an immediate gap.

3. Public empowerment approaches,

including information dissemination and participation. Behaviour change communication (BCC) is essential and goes beyond simply product advertising and awareness, which is usually undertaken in the private sector. The private sector can be encouraged to co-fund investment in this area and certainly benefit from CSOs' BCC campaigns.

4. Product innovation approaches,

including product development partnerships (PDPs). PDPs promise treatment and insecticide innovation, which can be brought to market by making greater use of financial incentives such as grants, subsidies, tax incentives, manufacturer-based subsidies and in-kind support to influence private provision.

The framework in Table 2 identifies the range of strategies for engaging with the private sector, their objectives and some examples of where they have been applied in the Asia-Pacific region. The nature of the engagement of governments or other stakeholders varies from strategy to strategy, and some will require higher levels of technical capacity within government bodies, prior to undertaking such an approach.¹⁵ Some strategies, such as contracting, social marketing, training and information dissemination, involve lower levels of risk for governments, and therefore require lower levels of technical capacity, while others, such as financial incentives, strategic market development, PPPs and accreditation/licensing, are more complex and require a greater level of planning, coordination and development of technical capacity prior to implementation.

¹⁵ Montagu, D. et al., *The Private Sector and Health Services Delivery in the EAP Region*. (UNICEF Report, 2010).

Table 2: Framework summarising private sector engagement strategies

PRIVATE SECTOR STRATEGIES		OBJECTIVES	EXAMPLES
1. Market-based approaches			
a. Financing mechanisms			
Social Insurance. Equitable levels of funding for stipulated health care.	Generate provision for malaria diagnosis and treatment to defined population.	Vietnam's 'Health Care Fund for Poor', Indonesia's 'Jamkesmas' for vulnerable groups and Philippines' 'PhilHealth' tuberculosis (TB) are all examples of pro-poor financing mechanisms which are usually applied in lower middle income countries. ¹⁷ Implementation depends on the level of socio-economic development, financial sector development and employment conditions, especially the existence of a larger proportion of formal sector organised establishments.	
Financial incentives. Use of grants, subsidies, tax incentives and in-kind support to influence private provision. Also includes manufacturer-based product subsidies.	Stimulate private providers to deliver ACTs, LLINs to a defined population. Vouchers schemes can link supply to retail provision.	In PNG , taxes and tariffs on malaria commodities were removed to reduce costs and improve access (Case Study 1). In Cambodia , the Affordable Medicines Facility for malaria (AMFm), is an example of a manufacturer-based product subsidy, which is negotiated directly with medicine manufacturers. Importers pay 80 per cent less for ACTs and these lower costs can be passed to the consumer (Case Study 2).	
Contracting. Purchasing services from private providers, applying benchmarks for services, quality of care, health outcomes.	Increase range of choice and encourage higher quality services.	In Afghanistan , the government contracts primary health care out to NGOs to directly supply services as the public sector is severely weakened by conflict. ¹⁸	
Purchasing. Buying goods and services for limited time, from private providers - lower risk and commitment than contracting.	Increase value for money to public sector by expanding range and increasing efficiency through competition.	In Cambodia, Myanmar and Laos , the government purchases LLINs for free distribution to specific high-risk populations. While this has the potential to improve equitable coverage, it does also have the potential to crowd-out the existing private sector net retailers.	

¹⁷ Ahmed, S. et al., *Analysing relationship between the state and non-state health care providers, Asia and the Pacific (Health Policy & Health Finance Hub, University of Melbourne, 2011)*. (Examples are not specific to malaria).

¹⁸ Sabri, B. et al., 'Towards sustainable delivery of health services in Afghanistan: options for the future', *WHO Bulletin*, September 2007.

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
<p>b. Marketing mechanisms</p>	<p>To create new sources of supply and demand</p>	
<p>Social Marketing. Using commercial channels, techniques and communication to market products with public health benefit. INGO/NGO managed operations.</p>	<p>Increase population coverage; ensure supply of subsidised product to wide geographical area.</p>	<p>In Cambodia, the Bundling Strategy implemented by Population Services International (PSI) provided long lasting insecticide treatment kits (LLITKs) which were bundled free with untreated nets. This innovative strategy prevented ‘crowding-out’ of existing untreated net market and leveraged the cost efficiencies of the existing retail channels to supply LLITKs. (Case Study 3); PSI also implemented the social marketing of a case management initiative which was successful in supplying subsidised ACT’s through private sector formal and informal channels.¹⁹</p> <p>In Afghanistan, the social marketing of insecticide treated nets (ITNs) by HealthNet International is an example of this approach being used in a conflict situation. ITNs were sold through a network of clinics run by NGOs. Sufficient revenues were generated to restock nets within 2 years and the same approach was applied in refugee camps.²⁰ This approach also has potential for new product introduction, allowing technologies such as hammock nets and repellents to be widely distributed to those who need them.</p>
<p>Social Franchising. Using commercial channel, techniques and communication approaches to market networks of service providers. Managed by INGO/NGOs.</p>	<p>Substantially increase reach and assure quality standards.</p>	<p>Myanmar’s ‘Sun Quality Health’ program implemented by PSI is a social franchising initiative using enlisted formal private providers in urban areas. Reach and health impact were strengthened considerably by adding a second tier of informal providers, the Sun Primary Health Network who were linked to these formal providers. This extended coverage of care into rural areas. (Case Study 4).</p>

¹⁹ Littrel, M. et al., ‘Case Management of malaria fever in Cambodia: results from national anti-malarial outlet and household surveys’, *Malaria Journal*, 2011.

²⁰ Rowland, R. et al., ‘Prevention of malaria in Afghanistan through social marketing of insecticide-treated nets: evaluation of coverage and effective cross-sectional surveys and passive surveillance.’ *Tropical Medicine & International Health*, 2002.

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
<p>Strategic Market Development. Detailed analysis of overall existing commodity retail market and comparative advantage of all stakeholders. Enabling/financing market growth e.g. through regulation, technology transfer, improving supply chains etc.</p>	<p>Creation of a self-sustaining market mechanism for increased supply of essential health products e.g. ITNs, LLINs etc. Use of M4P, Value Chain Analysis etc.</p>	<p>In Cambodia, ACTwatch was set up to address the gap in data on antimalarial medicines. Studies collect data from shops and health facilities in order to investigate malaria treatment seeking behaviour in the community, and analyse the functioning of the supply chain. This example highlights that evidence can inform policy discussions and provide critical insights into the private sector's role.²¹</p>
<p>Social entrepreneurship programs. Establishing training and support of networks of individuals to provide goods and services.</p>	<p>Substantially increase commercially viable reach of goods and services.</p>	<p>Enterprise Challenge Funds (ECFs) are an instrument by which donors can directly encourage pro-poor outcomes from private sector activity. ECFs can improve the business enabling environment, focusing on access to finance, agribusiness and aspects of supply chain management. They also have the potential for strategic market development activities, such as net production and retail.</p>
<p>c. Organisational collaboration</p>	<p>Change market conditions to increase participation by private providers in malaria programs</p>	
<p>Alliances among providers. Establishing and encouraging formal links and collaboration among providers.</p>	<p>Increase private sector contribution by creating groups with economies of scale for more efficient public-private collaboration.</p>	<p>Myanmar Medical Association (MMA) is a professional association of formal private health providers (Case Study 5). This example shows the importance of finding the right balance between incentives and regulation to enable better use of self-regulating professional organisations in order to improve the quality of care among formal providers.</p>

²⁰ www.ACTWatch.info

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
<p>Coordination/alliances between public and private sectors. Establishing and encouraging formal links and collaboration between public and private sectors – PPPs.</p>	<p>Foster actions by private sector that promote health objectives and increase private sector participation e.g. major corporations' workplace health care.</p>	<p>In Indonesia and PNG, the extractive industries' malaria control programs provide reach and coverage of large numbers of vulnerable mobile populations in high malaria transmission areas, with weak public health infrastructures. ExxonMobil (PNG), Newcrest Mining (PNG) and Newmont (Indonesia) carried out comprehensive malaria control workforce programs and extended programs for surrounding communities. (Case Studies 6, 7, 8).</p> <p>In the Philippines, the Shell Foundation is working with government to implement a social investment program which established and trained staff for village laboratories and held community sensitisation malaria meetings (Case Study 9).</p> <p>In PNG, OilSearch undertook the training of community malaria workers for rapid diagnostic tests (RDTs) which was sustainably financed through charging of user fee (Case Study 10).</p> <p>In Indonesia and Philippines, EpiSurveyor, a free mobile phone and web-based data collection system showed the potential for PPPs to use mobile phone technology. The initiative included private sector foundations, with partners: Datadyne; UN Foundation; Vodafone Foundation and Knight Foundation. (Case Study 11).</p> <p>In Cambodia, a LLIN Loan Scheme implemented by University Research Company (URC) and Family Health International (FHI) allowed farm owners in high risk areas who employ large numbers of temporary mobile workers to protect their migrant workers by providing LLINs (Case Study 12).</p>

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
d. Policy dialogue		
Policy dialogue. Engaging private sector in discussions - may extend to consultation in development of legislation, standards, regulatory and facilitation systems.	Foster private sector adherence to policy.	The Novartis Foundation for Sustainable Development holds an annual international symposium to strengthen the development policy dialogue between the private sector, NGOs, research institutions and state bodies. Malaria is a focus area. ²²
2. Legal/administrative approaches		
a. Regulation		
Accreditation/certification. Setting and enforcing standards among organisations.	Raise standards of care, health outcomes, and efficiency by enabling empirical basis for judging quality.	In India and Thailand , accreditation schemes are in place which highlight that they are more successful in middle income than low income countries. This is due to low income countries having a lack of guaranteed government funding or private financial payment mechanisms which make participation valuable to the facilities targeted for accreditation. This strategy is unlikely to be a core part of quality improvement for malaria in low income countries where social franchising is a better tool to enforce quality standards. ²³
Licensing. Setting and enforcing standards for individual providers.	Raising standards of individual practitioners by setting and enforcing criteria for practice.	In Myanmar, a Monotherapy Replacement Project implemented by PSI, will raise standards by actively supporting the national ban on the sale of monotherapies in the private sector and encouraging the public to demand a quality assured ACT from the drug sellers with communication campaigns. ²⁴ This project, which is still in its early stages, will demonstrate that innovative approaches to raising standards, for example by actively working to enforce bans of monotherapies, can be as effective as issuing licenses. (Case Study 13).

²² Novartis Foundation for Sustainable Development [web page] <<http://www.novartisfoundation.org/page/content/index.asp?MenuID=268&ID=609&Menu=3&Item=45.9>>.

²³ Ahmed, S. et al., Analysing relationship between the state and non-state health care providers, Asia and the Pacific (Health Policy & Health Finance Hub, University of Melbourne, 2011), and Private Healthcare in Developing Countries, Accreditation [web page] <<http://ps4h.org/accreditation.html>>.

²⁴ This activity, while not necessarily issuing licenses, is the best proxy for licensing in the context of enforcing standards and criteria for practice.

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
<p>Pricing mechanisms. Setting, monitoring and enforcing prices of medicines, devices, consultations.</p>	<p>State monitors and enforces price of essential medicines and other technology.</p>	<p>In India, the National Pharmaceutical Pricing Authority (NPPA) is an example of a body which can fix/revise the prices of controlled bulk medicines and formulations and enforce prices and availability of medicines.²⁵ They can also recover amounts overcharged by manufacturers for controlled medicines and monitor prices of decontrolled medicines in order to keep them at reasonable levels.</p>
<p>Technology regulation. Formal state approval and reimbursement structures, process and enforcement.</p>	<p>State controls safety, efficacy and cost of health care by regulating availability/sale of pharmaceuticals and LLINs.</p>	<p>In some countries, the stipulation to supply only WHO pesticide evaluation scheme (WHOPES) approved LLINs is being implemented. This has standardised the production of LLINs and created an international export market for 10 manufacturers (four of whom are in the Asia-Pacific region). While the protective quality of nets has been improved, local LLIN producing markets in developing countries have been crowded out in some cases.</p>
<p>Market regulation. Includes anti-monopoly/competition laws, consumer protection mechanisms and enforcement.</p>	<p>State protects citizens from (high) monopoly pricing.</p>	<p>In Cambodia, China, Indonesia, Laos, Myanmar, Singapore, Thailand and Vietnam, ‘Operation Storm’ was implemented in partnership with INTERPOL. This example showed the importance of regional, multi-sectoral collaboration for the enforcement of medicine policy and the seizure of fake medicines. This intervention demonstrated that the problem of counterfeit medical products should be managed beyond health sectors and borders, as it is a criminal action requiring the involvement of all in the criminal justice system such as police, justice, customs and national regulatory authorities. (Case Study 14).</p>

²⁵ WHO Member states and Medicines Price Information.

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
<p>b. Training</p> <p>Provider training. Educating and supporting private providers.</p>	<p>Improving standard of care of private providers.</p>	<p>In Myanmar, the Monotherapy Replacement Project implemented by PSI (Case Study 13) is one whereby the dominant supplier of monotherapy which supplies 70-80 per cent of all artemisinin-based monotherapies (AMTs) in the country has agreed to supply ACTs instead, buying them from PSI at a subsidised rate. The project will also seek to educate to increase demand for ACTs. Although the project looks promising, it is in its early stages and so the impact is yet to be recognised.</p> <p>In Cambodia, the Bundling Strategy (Case Study 3) is another example of provision of training to ensure adherence to treatment protocols and quality of care, particularly in the informal private sector.</p>
<p>3. Public empowerment</p> <p>Information dissemination. Information, education and communication (IEC) campaigns to promote healthy behaviours and health service use. Implemented by NGOs and social marketing organisations.</p> <p>Participation. Establishing formal opportunities for the public to communicate their opinions about services and service providers.</p>	<p>To ensure: Quality, Coverage</p> <p>Communication with/educating the public about malaria prevention, diagnosis, and early treatment. Signposting to private providers.</p> <p>Provide opportunities for public opinion input.</p>	<p>In Cambodia, the Taxi Drivers Scheme run by URC and FHI involved drivers sharing malaria education with migrant passengers while also acting as referral sources in remote areas (Case Study 15). PSI also provides ACT treatment, multi-media BCC campaigns, including consumer campaigns and training (Case Study 2).</p> <p>In Vanuatu, community participation for elimination in the context of low transmission (Tafea Province) showed continued IEC/BCC is essential to maintain preventive (and treatment seeking) practices.²⁵</p>

²⁵ Atkinson, J. et al., 'Community participation for malaria elimination in the Tafea Province, Vanuatu' *Malaria Journal*, 2010.

PRIVATE SECTOR STRATEGIES	OBJECTIVES	EXAMPLES
<p>Formal communication/feedback. Establishment of formal paid positions supervising/ensuring private provider adherence. Ombudsman-like positions in public-private initiatives. Capacity to recommend and impose sanctions.</p>	<p>Create advocacy roles for public interest within new public-private entities.</p>	<p>In Indonesia, state-operated health centres display posters prominently, alerting patients to their rights to free health care; that health staff cannot elicit extra payments; and, if they do, to report them by telephone.²⁷ These channels can be harnessed to improve knowledge of malaria services among the population who uses them and their associated rights.</p>
<p>4. Product Innovation</p>		
<p>PDPs. A variant of PPPs focussed on research and development (R&D) for new product development.</p>	<p>To ensure: Quality, Cost</p> <p>To create quicker, less costly development of technologies with superior public health benefits relative to existing technologies.</p>	<p>The Innovative Vector Control Consortium (IVCC) is a not-for-profit PPP whose work includes seeking new active ingredients for indoor residual spraying (IRS), ITNs and information development systems.</p> <p>The Medicines for Malaria Venture (MMV), a not-for-profit PPP which aims to provide effective and affordable antimalarial medicines. It is too early to say whether the products developed have had a significant health impact, although MMV has improved the pipeline for future ACTs.</p>

**Primary objectives: to increase coverage of essential malaria interventions; to improve the quality of care provided; and to control excessive health care costs to users*

²⁷ Atkinson, J. et al., 'Community participation for malaria elimination in the Tafea Province, Vanuatu' *Malaria Journal*, 2010.

5. Challenges and opportunities for engaging the private sector

The framework of strategies in Section 4 is a planning tool to assist decision-makers in considering the range of possible strategies for engaging the private sector in malaria control. Ideally it could be used to analyse the extent of private sector utilisation at the national level. However, this is a highly complex area and a number of challenges still remain.

5.1 Weak regulation

National level

Several well documented and widespread challenges exist in engaging the private sector in malaria control, including the low availability of ACTs; availability of AMTs; poor quality or counterfeit medicines; poor prescribing practices; high price mark-ups; and product procurement delays. These issues are compounded by weak regulation and considered to be closely linked to rising artemisinin resistance in the region.²⁸ The unorganised nature of private sector markets in the region reflects the limited ability and/or will of governments to establish appropriate regulatory frameworks. The future engagement of the private sector will be strongly influenced by government regulatory action.

In most countries legislation and regulation are in need of review to adequately reflect the current and potential role of the private sector. Expensive

and time-consuming regulatory practices such as the lengthy, opaque and costly legal process for importing pharmaceutical products, customs clearances and high storage costs are all barriers to encouraging constructive private sector engagement.²⁹ Addressing these barriers is likely to have benefits for the availability of malaria medicines and other technologies including those for other diseases such as tuberculosis and HIV. Similarly, in many countries of the Asia-Pacific region, taxes and tariffs on malaria product imports continue to represent a significant barrier (see Annex 3).

Regional level

Government regulatory and monitoring strategies for curtailing trade in counterfeit medicines are increasingly important for malaria control. Despite World Health Organization (WHO)'s guidelines on combatting counterfeit medicines, most countries do not have the infrastructure or financial resources to implement or enforce controls. A recent collaboration with INTERPOL called 'Operation Storm' (2009) showed that it is possible to unite police, customs and medicine regulatory authorities regionally to tackle fake medicines (see Case Study 14, Annex 1).

²⁸ Littrel, M. et al., 'Case Management of malaria fever in Cambodia: results from national anti-malarial outlet and household surveys', *Malaria Journal*, 2011.

²⁹ Patouillard, E. et al., *The private commercial sector distribution chain for malaria treatment in Cambodia*. (ACTwatch/LSHTM, 2009).

Recommendation 1: Stewardship functions are a critical but under-resourced element of malaria control efforts and wider public health functions. Better, more efficient and consistent regulation of the private sector (including cross-border regulation) will improve access to quality assured malaria products as well as quality of malaria case management in the private sector and slow down the spread of artemisinin resistance.

5.2 Supply chain analysis

National level

Retailers have an important influence on the availability, quality and price of malaria products. There is, however, little understanding of retail supply chains and how they affect prices for the consumer or of the very different distribution channels for LLINs and medicines.³⁰

This is an important consideration for LLINs as they have the characteristics of both a public and a private good. This is due to the mass effect of treated nets, which benefits both users and non-users. LLINs therefore can be described as ‘a private good with a positive externality’. This goes some way to justify their supply through public funds, but their relatively high prices make commercial viability a problem in the private sector. Supply chains, however, are just one component of a wider value chain analysis. Value chain analyses (see Annex 5 for illustrative diagram) are important to ascertain the commercial viability of LLINs in retail markets. The M4P approach has been used in Thailand and Vietnam for agricultural value chains, but not yet for health in the Asia-Pacific region. Value chain analyses examine the whole market systems, from initial research and development functions, right through policy, financing and

procurement, manufacturing, distribution and end user purchase. Elements in the chain can then be developed to function more effectively, sustainably and beneficially for poor people.

An example of such an approach undertaken in Cambodia is ACTwatch, an initiative set up to provide a comprehensive picture of the antimalarial market in seven countries to inform policy and decision-making.³¹ It is essential to operationalise this research to strengthen value chains for ACTs.

Available evidence on the distribution chains for retail sector malaria products often provide useful descriptive information, but there is a lack of nationally representative data and analysis of the determinants of supplier behaviour.³² The retail sector is likely to remain an important source of malaria prevention and treatment and current knowledge gaps could jeopardise future initiatives. It is critical to include this analysis as part of a wider market development approach which includes all sectors, public, NGO, social marketing, and private sector, as well as taking into account consumer demand. This analysis will ensure the right environment for development of strong PPPs which are based on accurate evidence.

Recommendation 2: Rigorous value and supply chain analyses for both prevention and treatment products are needed in order to fill knowledge gaps and allow further engagement of the private retail sector in the provision of malaria commodities.

³⁰ Patouillard, E. et al., ‘Retail sector distribution chains for malaria treatment in the developing world: a review of the literature’ *Malaria Journal*, 2010.

³¹ A partnership between PSI and The London School of Hygiene and Tropical Medicine.

³² Patouillard, E. et al., ‘Retail sector distribution chains for malaria treatment in the developing world: a review of the literature’, *Malaria Journal*, 2010.

5.3 Greater utilisation of non-state funding sources to improve the sustainability of malaria financing

Regional level

In the Asia-Pacific region there is a wide range of non-state funding sources that can be better utilised for malaria control. There is great potential for private sector co-investment, for example the Global Fund's 'East Asia-Pacific' region (Cambodia, China, Fiji, Indonesia, DPR Korea) has the highest financial contributions pledged from private sector sources (US\$60 million including US\$30 million from China alone).³³ The Global Business Coalition for Health, which represents multi-national companies, advocates for its members to bridge potential funding and infrastructure gaps in malaria control, in alignment with the priorities of the National Malaria Control Program (NMCP) of the host country. Both of these examples highlight that mechanisms can be utilised for sustainable financing of malaria control activities, funded by non-state sources.

Global level

Malaria programming has benefitted from innovative funding mechanisms, such as the Global Fund and, more latterly, UNITAID, which receives its funds through airline ticket taxes or regular budget contributions, currently totalling US\$1.6 billion. Of this total, 22 per cent works through market interventions to improve access to medicines, diagnostics and preventive commodities for malaria. By the end of 2011, UNITAID had delivered 120 million courses of ACTs to 21 countries; distributed 20 million LLINs in 8 countries; and secured 26 metric tons of the plant artemisinin (15 per cent of global demand) by brokering contracts between growers and extractors. Without this external support, it is likely

that this would not have been possible; however a five-year review of UNITAID's contribution is due to be completed in 2012 and this should be able to tell us more about its role in successfully leveraging non-state finances for malaria control. UNITAID is an example of innovative funding mechanisms promoting market-based approaches.

The potential role of the private sector in non-state funding is one of the most contentious issues for decision makers, since good evidence for where and how to invest in PPPs is scarce, but experience is growing. A further challenge is managing this vital resource and governments will need to be equipped to steward PPPs effectively. The issue of sustainable financing is challenging and since much private sector activity is dependent on political pressure, as well as its own operational and financial imperatives, advocacy is needed at all levels—local, national and regional—to ensure sustained interest and support for malaria control.

Recommendation 3: Use of non-state financing mechanisms can be expanded, particularly in the Asia region. It is crucial, however, that governments have the capacity to regulate and manage such mechanisms efficiently.³⁴

5.4 Establishing PPPs with the natural resource and agricultural industries for malaria control

Sub-national level

The Asia-Pacific region is richly endowed with natural and energy resources. Companies involved in oil and mineral extraction often operate in remote and difficult to access locations, which are beyond the reach of public health care services. They are however well-placed—operationally, logistically and financially—to support vulnerable

³³ GFATM, *Analysis of private Sector Contributions in Round 8 and 9 Proposals: Opportunities for Co-investments* (GFATM, 2010).

³⁴ Fryatt, R et al., 'Financing of health systems to achieve the health Millennium Development Goals in low-income countries.' *The Lancet*, 2010.

target groups with the provision of local public services.³⁵ In countries with established extractive industries, health care provision, particularly for employees, has long been a vital aspect of their operation. These provisions take the form of ‘inside the fence’ initiatives for employees and ‘outside the fence’ initiatives for surrounding communities.

Existing approaches to health care provision by extractive industries fall into three broad categories:

1. Third party provision of services and/or support with, for example, NGOs, providers or partners being contracted to deliver health programs. (See Annex 1, Case Study 8).
2. Direct provision of health care services. This is particularly common for the large mining companies such as Newcrest Mining in Indonesia (see Annex 1, Case Study 7).
3. Private sector support to the public sector through partnerships with local or national government. This approach is used by Shell in the Philippines (see Annex 1, Case Study 9).

Commonly in the mining sector, companies will have legally-binding obligations to provide health care for employees and often their dependents. Mining companies can find it more efficient to invest in a community health program as a means to fulfilling their obligations as an employer. This could take the form of investment in a community health facility or hospital. In PNG, for example, Newcrest Mining is funding a Medical Centre at its operations in Lihir. The cost of malaria in terms of productivity loss can be significant to extractive companies. For example, a baseline assessment carried out by British Petroleum (BP) at its plant in Indonesia revealed a malaria prevalence rate of 23 per cent among employees. BP developed a malaria control program which reduced this rate to 0.6 per cent and the annual incident rate by 88 per

cent, thus benefitting the employer and employees (see Annex 1, Case Study 16).

Extractive companies are often challenged to develop and maintain positive relationships with the local, regional and national communities and governments where they operate. A malaria control program can have a positive impact on its intended beneficiaries within a relatively short timeframe and at a known cost. The advantages of malaria control programs for the extractive industry are numerous.

Recommendation 4: Capitalise on opportunities for establishing PPPs with natural resource and agricultural industries to implement malaria control programs. A variety of interventions can be deployed including IRS, LLINs and malaria surveillance as well as strengthening the local health system. Expectations need to be realistic, however, in terms of the scope and geographical coverage of the interventions companies can maintain over a lengthy period of time. Consequently, carefully planned and implemented PPPs that engage and support local health authorities will stand a greater chance of achieving sustainability.

5.5 Insufficient research

National level

There is currently a lack of research to determine the cost-effectiveness of interventions involving the private sector. Because of this, and despite having some evidence of lessons learned (as highlighted in Table 2 and Annex 2), making decisions about which interventions to use is difficult. Further, the absence of comprehensive situational and outcomes analysis data on the private sector in the Asia-Pacific region “remains a major impediment to assuring equity of care.”³⁶ There is therefore an urgent need for high-quality studies addressing private sector malaria activities.

³⁵ JTA Helps Mining Companies, Islands Business.

³⁶ Montagu, D. et al., *The Private Sector and Health Services Delivery in the EAP Region*. (UNICEF Report, 2010). and Montagu, D. et al., *Private versus public strategies for health service provision for improving health outcomes in resource-limited settings*. (DFID, 2011).

Malaria treatment practices by informal providers are not fully understood.³⁷ Although social franchising goes some way to improve adherence, improving the services of informal providers requires better regulation, training and understanding of all stages of the supply chain to ensure low cost and equity for users.

Specific areas for further research include the use of RDTs to guide prescribing practice in the private sector, particularly in countries such as Cambodia where only 45 per cent of people with a recent malaria fever reportedly receive a diagnostic test; a greater understanding and potential use of social franchising to improve provider adherence to malaria diagnosis and treatment; and a greater understanding of the licensing of formal providers.^{38,39} Equally, with little evaluation of PPP arrangements, little is known of how they function and how successful interventions could be replicated.⁴⁰ This includes essential research for new product development, currently undertaken by PDPs. Furthermore, equity indicators are not routinely included in private sector program evaluations.⁴¹ This severely hampers efforts to ascertain the extent to which the private sector can serve the poor in the Asia-Pacific region.

Recommendation 5: A greater investment in documenting, sharing and using the evidence base on the role of the private sector in malaria prevention, diagnosis and treatment is needed. This will allow malaria programs to select the most appropriate strategies for their context and enhance the ability of these programs to reduce malaria cases and deaths in an equitable way.

5.6 Regional collaboration

Regional level

Asia-Pacific regional efforts to develop coordinated interventions provide valuable opportunities which could improve disease surveillance for border countries; pool resources for medicine and net procurement, strengthen country level commitment to meet international goals; and share lessons learned. As suggested by the Global Fund's Private Sector Report, PPPs should be encouraged through companies with operations in several countries to leverage resources on a larger scale and allow for synergies between participating countries.⁴² In addition, new regional efforts should be developed with a focus on best practices for engaging the private sector in malaria control. The malaria community, including international donors and CSOs, should convene fora to develop collaborative responses to shared challenges.

It is also essential to recognise and make use of existing regional fora, such as the Asia-Pacific Malaria Elimination Network (APMEN), the Association of South East Asian Nations, the WHO Mekong Malaria Programme, the Pacific Malaria Initiative (PacMI), the Asian Vivax Network and WHO's South East Asian and Western Pacific regional offices. (See example of a successful regional collaboration for the Solomon Islands and Vanuatu in Annex 1, Case Study 17, PacMi).

Similarly, a number of existing programs could be further supported to improve the business and regulatory environment for malaria activities. These include the Pacific Private Sector Development Initiative, managed by the Asian Development Bank and co-financed by AusAID, which aims to

³⁷ WHO, *Partnerships for Malaria Control: engaging the formal and informal private sectors*. (WHO, 2006).

³⁸ WHO, *Partnerships for Malaria Control: engaging the formal and informal private sectors*. (WHO, 2006).

³⁹ Yeung, S. et al., 'Socially-marketed rapid diagnostic tests and ACT in the private sector: ten years of experience in Cambodia', *Malaria Journal*, 2011.

⁴⁰ DFID, *Breaking the Cycle: Saving Lives and Protecting the Future - UK Framework for Malaria* (DFID, 2010).

⁴¹ Patouillard, E. et al., 'Can working with the private sector improve utilization of quality health services by the poor? A systematic review of the literature', *International Journal for Equity in Health*, 2007.

⁴² GFATM, *Review of the Private Sector Partnerships* (GFATM, 2010).

reduce barriers to the growth of businesses in the Pacific; the Business Call to Action and Business for Millennium Development, formed to develop business models that positively impact the poor.

Recommendation 6: Engaging the private sector through regional fora is key to increasing their role in malaria control, particularly in relation

to containment of artemisinin resistance and reaching highly vulnerable, remote and mobile populations.

6. Conclusion

The countries of the Asia-Pacific region can certainly benefit from greater utilisation of the private sector in order to accelerate progress towards the global target of a 75 per cent reduction in malaria cases and deaths by 2015.

This paper has highlighted the variety of private sector stakeholders impacting on malaria, both in the formal and informal health care sectors; and their relative strength in the Asia-Pacific region. Civil society programs, including social marketing and franchising, have been shown to strengthen private sector supply chains and services in the region, as have large employer workplace programs in the extractive industry. The countries of South East Asia and India can benefit most from continued engagement with this burgeoning sector as this is the region that most heavily relies on the private sector for delivering health services.

An essential element of malaria control, in the malaria elimination countries of this region, is target audience identification. This paper identified the most vulnerable population groups in the region. The private sector can provide a valuable ally in reaching some, but by no means all, of these target groups. For many of the most vulnerable, most likely in rural areas, the informal private sector is the most accessible source of malaria services. The formal sector, however, concentrated in urban areas, can be linked to these informal providers through alliances and social franchising. Opportunities also exist in PPPs made with major employers, as seen in the natural resource, infrastructure development and agricultural

industries, often located in high risk transmission areas.

A framework (Table 2) has been adapted to show the complex variety of private sector interventions available to assist with the core objectives of increasing coverage, ensuring quality and maintaining affordability of malaria products and services. There is evidence of all approaches (market-based, legal/administrative, public empowerment and product development) being trialled in the region, from which valuable lessons can be learnt, key of which is that a variety of coordinated approaches are necessary.

The paper finally ends with a discussion of the pertinent issues affecting utilisation of the private sector, which are essential to ensure that its comparative advantages are capitalised upon. These include the necessity of resourcing the crucial stewardship function of government and finding the right balance between regulation and incentives. Also important for funding is the identification of private sector co-investment opportunities, such as partnerships for new product development, as well as major workplace programs funded by employers. Sustainability is not guaranteed in all programs working with the private sector and the immediate health impact, versus long-term viability of activities, needs careful consideration. The paper emphasised the importance of understanding the emerging research priorities, as the lack of sufficient research into private sector cost-effectiveness is a major impediment to malaria programming and also

pointed to the need for regional collaboration for sustained funding, production and regulation of medicines and supply of commodities, particularly in high burden countries where drug resistance is present.

There are many benefits to actively engaging with the private sector for malaria control. These include their potential to improve health outcomes; higher perceptions of quality among service users; better incentive structures; and the possibility of stronger overall health systems when the private sector is included in country-wide policy and strategies.⁴³

In a climate of limited funding, strategic engagement with the private sector provides malaria control programs with both an *opportunity* and an *obligation*. There is an *opportunity* to

widen access, improve quality and reduce costs of malaria interventions, through a variety of interventions. However, the private sector cannot be considered a panacea; there is also an *obligation* to actively engage with the private sector at sub-national, national and regional level to plan and design comprehensive, complementary programs which ensure equity for poor and marginalised communities in both urban and rural areas of the Asia-Pacific region.

⁴³ Montagu, D. et al., *Private versus public strategies for health service provision for improving health outcomes in resource-limited settings*. (DFID, 2011).

Annex 1: Case Studies

Case study 1: Elimination of taxes and tariffs, Papua New Guinea⁴⁴

In 2011, the Malaria Taxes and Tariffs Advocacy Project (M-TAP) reported that only six countries worldwide had completely removed tariffs on products used to fight the disease, despite agreement to do so ten years ago. Dropping taxes and tariffs can play a key role in cutting costs because the vast majority of medicines and other products used to fight malaria are imported. These are: LLINs, ACTs, RDTs, insecticides for indoor spraying, and insecticide spray pumps.

M-TAP, which has been gathering evidence from nearly 80 malarious countries over the two year project, found that taxes and tariffs on antimalaria products provide only minimal revenues, and these gains are often offset by health costs and lost productivity from preventable malaria illnesses. In Cambodia, M-TAP found that non-tariff barriers present more obstacles for importation than existing taxes and tariffs, for example, in issues of procurement and supply management. Private sector providers continue to play a critical role in supplying access to malaria treatment and prevention despite the huge increase in donor commitments over the past five years, so removal of taxes and tariffs are another way to ensure that cost does not pose a significant barrier to access.

Case study 2: Affordable Medicines Facility for malaria (AMFm), Cambodia⁴⁵

Despite efforts to assure quality of care in the provision of ACTs, an alarming resistance to artesunate (an active derivative of artemisinin) was documented in western Cambodia. The poorly regulated private sector, where approximately 70 per cent of fever-sufferers seek treatment, is believed to have contributed to this resistance development by dispensing AMTs and sub-therapeutic doses of artemisinin.

The government reconsidered its use of the private sector in its battle against malaria. International support programs offered new opportunities to test market-based incentives that compel the private sector to provide optimal malaria care. The AMFm, hosted and managed by the Global Fund, invited Cambodia (and six other countries) to participate in its plan to flood their markets with highly subsidised formulations of ACTs that are so inexpensive that private sector providers can sell them as profitably as AMTs and other ineffective treatments. The AMFm program required participating countries to partner with the private sector for the distribution of ACTs.

The AMFm enables private importers to pay up to 80 per cent less than they did in 2008–2009. It pays most of this reduced price (a 'buyer co-payment') directly to the manufacturers to

⁴⁴ M-TAP/AED, Taxes & Tariffs on Anti-malarial Commodities: Cambodia Case Study (M-TAP/AED 2011).

⁴⁵ The Global Health Group, *Large Scale Malaria Treatment in the Private Sector: A Case Study of the Cambodian Experience* (The Global Health Group, 2010).

further lower the cost to eligible first-line buyers of ACTs. Unfortunately, low cost ACTs procured through AMFm arrived late in country and so it was not possible to show impact in the ACTwatch evaluations in Cambodia.

Case study 3: Bundling strategy, Cambodia⁴⁶

A bundling strategy was devised as an interim measure to address the issue of high demand for untreated nets. The strategy aimed to make use of the huge cost efficiencies of using the existing private sector net retail channels to supply LLITKs, bundled with untreated nets. This was possible because Cambodia has relatively few net importers and a highly centralised retail distribution system, with one major wholesale market as the hub through which most products flow out to provincial markets.

PSI was identified as the partner to work with to implement the strategy due to their significant experience of working in the private sector. PSI approached and gained buy-in from the existing net traders (importers and wholesalers) operating in Phnom Penh. Conventional nets were bundled at the top of the supply chain, where possible. A mass communications strategy encouraged buying a bundled net and dipping the net in the insecticide. The evaluation found 72 per cent of outlets were selling bundled nets (according to PSI MAP Survey data).

It was learnt that it is not efficient to segment the retail market and limit it to cater only to the high transmission areas of the country, without incurring huge cost inefficiencies; therefore the program was designed to bundle all nets, reaching all areas of the country. It was considered that as there is migration around the country, nets would be assured to reach migrant populations via this method before they moved to the at-risk areas.

Case study 4: Social franchising – Sun Quality Health (PSI), Myanmar⁴⁷

Launched in Myanmar in 2001, the social franchise network consists of a first tier of private licensed General Practitioners (GPs) called Sun Quality Health (SQH). SQH clinics offer services in malaria and also reproductive health, TB, pneumonia, diarrhoea, and HIV including STIs. In 2008 a Sun Primary Health (SPH) channel was launched to reach poor and vulnerable rural communities, within a 3 hour radius of the SQH clinic. SPH are a second tier of the network and are trained in a range of health areas for which they sell subsidised products. Currently SPH is being scaled up. Payment sources are 99 per cent OOP and 1 per cent free. Malaria disability adjusted life years (DALYs) averted in 2010: 18 523 and in 2011 46 567. This significant increase was attributable to the SPH community health workers.

Case study 5: Private provider alliances, Myanmar Medical Association⁴⁸

The Myanmar Medical Association (MMA) is the only professional body of medically qualified doctors in Myanmar, with over 8000 members and a total of 74 branches throughout the country. In 2009 MMA was funded to implement the Quality Diagnosis and Standard Treatment of Malaria by Private General Medical Practitioners (QDSTM) Project.

MMA's QDSTM project aims to provide quality assured diagnosis and treatment of malaria by the private medical GPs in selected townships. It is a continuation of a Three Diseases Fund project that empowered 173 GPs in 46 townships and provided quality assured diagnosis and treatment of malaria. Two fixed clinics extend the services to the village level through setting up mobile teams and trained volunteers. The mobile teams and volunteers provided health education and case management

⁴⁶ PSI, *Cambodia Malaria Program: The Bundling Strategy*. (PSI, 2010).

⁴⁷ The Global Health Group, *Clinical Social Franchising Compendium: An Annual Survey of Programs 2012*, (The Global Health Group, 2012).

⁴⁸ Myanmar Medical Association [web page] <<http://onlineictrader.com/mma-malaria/page.php?p=profile&id>>.

of malaria. The volunteers are provided with essential medicines and RDTs to manage malaria in between the visits of mobile teams. The mobile team visits one/two villages per week and also supervises the activities of trained volunteers. The implementation is regularly supervised and provides feedback to MMA technical staff, central supervisors and the WHO malaria unit.

In year 3 and 4, the project will further expand to 14 new project townships and train 50 more GPs to deliver malaria case management in accord with the National Malaria Treatment Guidelines. In addition, the project management, in consultation with WHO, will open fixed and mobile clinics in two remote townships (Kachin and Rakhine) where malaria is highly endemic and access to health services is very limited. The project will focus on strengthening in-house capacities; ensuring participating GPs follow the QDSTM Project Standard Operating Procedures; and improving monitoring and evaluation.

Case study 6: ExxonMobil, Papua New Guinea⁴⁹

ExxonMobil is implementing 'inside' and 'outside' the fence initiatives at its operations in PNG. Inside the fence, the Malaria Control Programme covers both employees and contractors working in malaria-prone areas. It includes awareness campaigns, mosquito bite prevention tools, and antimalaria medication, and promotes early diagnosis and treatment to fight malaria. Outside the fence, ExxonMobil, through its Malaria Initiative, has collaborated with the Rotarians Against Malaria Program on logistics, planning and bed net distribution. Plans are under development for enhanced malaria diagnostics at relevant community clinics. More than 1000 community members have been tested for malaria and were

treated if positive. ExxonMobil is also working with the MMV to fund clinical trials of new antimalarial medicines in PNG.

Case study 7: Newcrest Mining Ltd., Gosowong, Indonesia⁵⁰

Newcrest Mining Ltd is implementing an 'inside the fence' employee protection malaria control program at the Gosowong gold mine in Indonesia. Education, counselling, prevention, risk-control and treatment programs are available to all workers and treatment is also provided to workers' families. Employees are given safety inductions to learn about the dangers of malaria and can find out further information from or report cases of malaria to the safety officer, malaria control officer or site doctor. Prevention and risk-control methods include reporting of potential malaria hazards, fogging, IRS, and sanitation. Malaria cases are treated at the site clinic or the local hospital where employees are covered by health insurance.

Case study 8: Newmont, Batu Hijau, Indonesia⁵¹

Since 1996, Newmont has been contracting International SOS to operate an integrated broad-based health service at its Batu Hijau mine. The program involves prevention and treatment activities both inside and outside the fence including larviciding, screening of military personnel for malaria before entering the control zone, distribution of mosquito nets, space spraying, training of community members on diagnosis of malaria, capacity building of government health workers, screening and treatment of children in surrounding villages, case management in the site clinic and first aid posts and medical evacuation if necessary. Malaria prevalence reduced in community school children from 47.3 per cent in

⁴⁹ ExxonMobil Corporate Citizenship Report, 'Applying National Content Best Practices in Papua New Guinea' *ExxonMobil* [web page] <http://www.exxonmobil.com/Corporate/community_ccr_globalstories_natcontent.aspx>.

⁵⁰ Newcrest Mining Ltd, 'Sustainability Report 2011', *Newcrest Mining Ltd* [web document] (2011). <http://www.newcrest.com.au/sustainability/current-sustainability-report>.

⁵¹ International Council on Mining and Metals, 'Case Study: Newmont's Integrated Malaria, HIV/Tuberculosis Programme at Batu Hijau', [web page] (2009) <<http://www.icmm.com/page/13383/newmonts-integrated-malaria-hiv/tuberculosis-program-at-batu-hijau-indonesia>>.

1999 to 1.5 per cent in 2007. In addition, the malaria incidence rate in the mine workforce dropped from 53 per 1000 employees in 1998 to 5 per 1000 in 2007.

Case study 9: Shell, Palawan, Philippines⁵²

In 1999, the Pilipinas Shell Foundation launched the Movement Against Malaria social investment program. The foundation worked with the provincial government and the Department of Health to set up 344 malaria village laboratories in the Palawan province, with trained local staff to detect the malaria parasite in blood smears. The program provides leaflets and holds village meetings to raise awareness of malaria prevention. It encourages people to sleep under mosquito nets, clear breeding areas and keep themselves covered in the evening. In 2006, the program received a US\$14 million five-year grant from Global Fund to expand to four more provinces. Another grant in 2010 provided US\$31.4 million and increased the total number of provinces covered to 40. The program has reduced malaria deaths by nearly 97 per cent from 99 deaths a year in 1999 to three in 2011.

Case study 10: Oil Search, Southern Highlands Province, Papua New Guinea⁵³

Since 1998, Oil Search has been implementing the Marasin Stoa program, a village malaria treatment initiative at its Hides gas field project area in the Southern Highlands Province. The program entails training a community member, usually a woman, in basic malaria diagnosis using a Rapid Diagnostic Kit and supplying pre-packaged (dosage for weight category) malaria medication. The village treatment providers also collect malaria blood slides from each case for laboratory analysis in the Oil Search laboratory in order. The treatment providers charge a nominal fee and can sell additional 'over the

counter' health products to supplement their income. This ensures sustainability of the program and addresses other social development issues such as poverty and gender equity. The program has seen a steady decline in the incidence and prevalence of malaria in all affected communities. Direct management has been taken over by a local church health service provider, with technical support provided by the Oil Search Health Foundation. The National Department of Health (NDOH) has endorsed the program and the model is being trialled in other parts of the country. Additionally, Oil Search has been appointed the new principal recipient (PR) of funding from the Global Fund replacing the NDOH as PR.

Case study 11: mHealth management information systems, Philippines, Indonesia⁵⁴

EpiSurveyor is a free mobile phone- and web-based data collection system. It is used for the collection of information regarding clinic supervision, vaccination coverage or outbreak response, and it helps to identify and manage important public health issues including HIV/AIDS, malaria, and measles. As of April 2012, EpiSurveyor, based in Kenya, has nearly 8000 users in more than 170 countries worldwide including the Philippines and Indonesia, making it the most widely-used mHealth software. Partners include: Datadyne, United Nations Foundation, Vodafone Foundation, and Knight Foundation.

⁵² Shell, 'Biting Back Against Malaria' *Shell* [web page] <http://www.shell.com/home/content/aboutshell/features_highlights/malaria/>.

⁵³ Oil Search Health Foundation. <<http://www.oilsearchhealthfoundation.org/programmes/>>.

⁵⁴ Royal Tropical Institute, 'mHealth Projects: Examples from Low- and Middle-Income Countries', [web page] <http://www.mhealthinfo.org/projects_table>.

Case study 12: Farm lending scheme, Cambodia⁵⁵

The UR Control and Prevention of Malaria (CAP-Malaria) Project aims to meet the needs of mobile and migrant workers, through the implementation of a farm lending scheme. LLINs are loaned to temporary farm workers through the farm owners. Currently donors subsidise the full cost of the LLINs. Monitoring and administration is provided with NGO support (FHI/URC). BCC is provided by Village Malaria Workers (VMWs) and Mobile Malaria Workers (MMWs) with support from FHI/URC.

A formal evaluation is pending, however there is potential to develop this program further. To make the program more sustainable, farm owners were asked if they would be prepared to buy nets for their workers, having participated in the scheme, rather than be given them for the loan scheme. Owners said that having participated in the scheme they can see the advantage of nets being used by their workers and some would indeed buy nets to loan to workers; others said that they would be prepared to advance labourers wages to enable workers to buy nets from the local markets at the beginning of their stay.

Case study 13: Monotherapy Replacement Project, Myanmar⁵⁶

(N.B. This project is new and not yet fully operational.) Myanmar bears by far the greatest burden of malaria in the Greater Mekong sub region, 70 per cent of its population is at risk. It accounts for 20 per cent of all malaria cases in South East Asia. There is also evidence of artemisinin resistance. The UK Department for International Development (DFID), in collaboration with the Bill and Melinda Gates Foundation, is supporting a three-year project to replace less effective artemisinin monotherapy with ACTs in the informal private sector. The

formal and informal medicine sellers have wide geographical and population coverage in Myanmar.

In Myanmar there is a dominant supplier that provides 70-80 per cent of the antimalarial medicines to the private sector. The supplier has agreed to supply ACTs in place of the dominant monotherapy. PSI will purchase ACTs and sell them to the distributor at a subsidised price. The price structure (mark-ups along the supply chain) is designed in such a way as to ensure that consumers pay what they can afford for a full course of ACTs (that is, the current cost of a partial course of artesunate). Medicine replacement will begin later in 2012. PSI is also targeting medicine retailers and consumers with intensive BCC as part of the project. It will seek to educate these groups in order to (a) increase demand for ACTs, keeping prices affordable and (b) ensure that patients receive and take the recommended dosages and know where to access them. RDTs will also be supplied as part of the package. PSI supports over 1200 franchised clinics with private sector doctors, with supporting community health workers and a national social marketing operation. In addition, this project will enforce standards and criteria for practice. It will raise standards by actively supporting the national ban on the sale of monotherapies in the private sector; encourage the public to demand a quality assured ACT from the drug sellers with communication campaigns; and train private drug sellers to use RDTs to determine whether or not the person has malaria and treat them correctly. With a model of working through the private sector, PSI is less limited geographically than other NGOs in Myanmar. While this initiative is innovative and looks promising, the preliminary work has just started and actual replacement of monotherapy has yet to be done. Its outcome and impact remains to be seen.

⁵⁵ Malaria Consortium, *Workshop Report to Consolidate Lessons Learned on BCC and Mobile/Migrant Populations in the Strategy to Contain Artemisinin Resistant Malaria* (Malaria Consortium, 2011).

⁵⁶ DFID, *Business case for the replacement of malaria monotherapy drugs in the private sector to support the containment of drug resistant malaria in eastern Burma* (DFID, 2011).

Case Study 14: Market regulation through INTERPOL⁵⁷

A multi-country police operation targeting the manufacture and distribution of counterfeit medicines in South East Asia resulted in arrests and the seizure of 20 million fake and illegal medicines, including antimalarial medicines. It also led to the closure of more than 100 pharmacies and illicit medicine outlets.

Under the framework of WHO's International Medical Products Anti-Counterfeiting Task Force (IMPACT), Operation Storm II (July-November 2009) was co-ordinated by INTERPOL and supported by the Western Pacific Regional Office of WHO. It provided a platform for collaboration between national police, customs and medicine regulatory authorities from eight countries (Cambodia, China, Indonesia, Laos, Myanmar, Singapore, Thailand and Vietnam), as well as with international organisations and the private sector.

This intervention demonstrated the strength of regional cooperation and that the problem of counterfeit medical products should be managed beyond health sectors, as it is a criminal action requiring the involvement of all parties involved in the Criminal Justice System such as police, justice, customs and national regulatory authorities.

Case Study 15: URC taxi drivers health education for migrant workers⁵⁸

In three project border forest areas of Cambodia, over 47 000 passengers were transported by taxi drivers annually, of which approximately 45 per cent were mobile or migrant workers. It was estimated that each driver transported between 90-120 migrants per month depending on the area. Taxis are branded with malaria slogans and play music cassettes interspersed with malaria

prevention and treatment messages. Drivers are incentivised to participate with small payments. It was found that taxi drivers play a vital role in sharing health education messages with their passengers and that they could refer patients in remote areas to appropriate services. On-going support from the implementing NGO, URC (and FHI) is critical to ensure drivers message consistency and cooperation.

Case Study 16: BP, Tangguh, Indonesia⁵⁹

Commencement of BP's operations in Tangguh prompted a baseline assessment that revealed a high malaria prevalence rate of 23 per cent. This prompted BP to develop a five-year plan for a health program with a commitment to malaria eradication both inside and outside the fence. A community health unit was formed to implement the program which involved applying IEC services as well as prompt screening and treatment of workers from high endemic villages. The approach inside the fence included diagnosis and treatment at project clinics, vector control activities and provision of chemoprophylaxis. The community approach involved social marketing whereby local residents were selected and trained as VMWs to carry out diagnosis and treatment of malaria. Supplies such as posters, malaria kits, test supplies, pre-packaged treatment and surveillance materials were provided to the VMWs to use during home visits. Incentives were provided to VMWs based on their performances to promote continuity of the program. They were encouraged to buy treatment packages at wholesale prices and resell them to patients for a small profit. The result was a decrease in malaria prevalence in the surrounding villages, which also resulted in a decrease in malaria transmission risk at the plant from 23 per cent in 2000 to 0.6 per cent

⁵⁷ INTERPOL, 'INTERPOL Press Release 2010: INTERPOL applauds Southeast Asia Operation Storm II's success in disrupting trade of counterfeit medical products', [web page] (2010) <<http://www.interpol.int/News-and-media/News-media-releases/2010/PR007>>

⁵⁸ Malaria Consortium, *Workshop Report to Consolidate Lessons Learned on BCC and Mobile/Migrant Populations in the Strategy to Contain Artemisinin Resistant Malaria* (Malaria Consortium, 2011).

⁵⁹ BP Indonesia, 'Malaria Control' BP [web page] <<http://www.bp.com/sectiongenericarticle.do?categoryId=9004761&contentId=7008834>>.

in 2009. Additionally, annual malaria incidence decreased from 88/1000 in 2006 to 11/1000 in 2008. From 2010, BP began to transfer ownership of the program to the local Health Department and to a local NGO. BP also trained local Health Department personnel in surveillance procedures, epidemiological investigation, microscopy and quality assurance. BP will continue to provide technical advice, monitoring and evaluation and quality assurance.

Case Study 17: Pacific Malaria Initiative, Solomon Islands and Vanuatu⁶⁰

Australia's PacMI commits funding to combat malaria in the Solomon Islands and Vanuatu. PacMI supports the national malaria programs based on a single consolidated malaria workplan that utilises the combined resources of the Ministries of Health, the Global Fund, WHO and AusAID. An important component of PacMI is the funding of the Pacific Malaria Initiative Support Centre (PacMISC). PacMISC is a consortium comprising the University of Queensland's School of Population Health (lead entity), the Queensland Institute of Medical Research, and the Australian Army Malaria Institute. Support is also provided

through partnership with The Regional Assistance Mission to Solomon Islands, Rotarians against Malaria, and many women's FBOs. The flexible nature of PacMI funding helped fill the financing gap created by delays in Global Fund grant disbursements. This enabled the procurement of critical commodities and a timely rollout of interventions. In a relatively short period of time, the Vector Borne Disease Control Program staff in each country recorded significant achievements in a logistically challenging environment which are all the more remarkable given the serious human resource constraints, especially in Vanuatu. The significant outcomes achieved by PacMI are a result of the flexible funding mechanism, which was invaluable during the delays in Global Fund funding, the high priority accorded to malaria by both national governments, the team approach taken among partners through the mechanism of the Malaria Steering Committees, and the advocacy efforts of the Malaria Reference Group.

⁶⁰ Toole, M. et al., Pacific Malaria Initiative Independent Progress review (AusAID HRF, July, 2010).

Annex 2: Target group table

TARGET GROUPS	GROUP PROFILE	OUTREACH POSSIBILITIES	PUBLIC SECTOR	CIVIL SOCIETY	PRIVATE SECTOR (excl. Civil society)
4.1	STABLE GROUPS				
Pregnant women & children under 5	Priority vulnerable target due to low immunity.	POSSIBLE: Residence known.	VARIOUS: LLINs and treatment via ANC, TBAs, EPI, Schools etc.	VARIOUS: NGO/FBO/CBO LLIN vouchers	HIGH POTENTIAL: Large group, likely to use private sector for quick access
Ethnic groups	Often in conflict areas, insecure, less access to paid work. Located in specific geographic areas. Often language issues.	DIFFICULT: Hard to reach locations and limited access for NGO/govt.	LIMITED: Depending on govt. policy toward ethnic minorities.	VARIOUS: NGO/FBO/CBO	VARIABLE: Difficult to target specialised ethnic populations.
Long-term migrants/IDPs	Politically insecure and limited access from civil society and/or government. May lack legal status.	DIFFICULT: NGOs, CBOs, FBO and local rights based groups.	LIMITED: Often difficult because unregistered population.	VARIOUS: NGO/FBO/CBO	VARIABLE: Likely to be less able to access retail, particularly if in camps.
Permanent residents in high transmission areas	Drug resistance threat. Widespread ecological and social risk factors. Geographically specific areas – high risk along international borders.	POSSIBLE: Residence known.	VARIOUS: Through public network for the most vulnerable. Cross-border collaborations.	VARIOUS: NGO/CBO/FBO	HIGH POTENTIAL: Supply chains likely to reach major geographic areas especially at borders etc.

TARGET GROUPS	GROUP PROFILE	OUTREACH POSSIBILITIES	PUBLIC SECTOR	CIVIL SOCIETY	PRIVATE SECTOR (excl. Civil society)
4.2	MOBILE GROUPS				
AFFILIATED TO EMPLOYER					
Semi-mobile employees	Affiliated to company employer. Working in endemic area e.g. <ul style="list-style-type: none"> • Mining, oil and gas • Hydroelectric dams • Food processing, factory work • Rubber/palm oil plantations 	Residence at employer/farm location is known. Contact possible through employer.	LIMITED: Contract private sector Role to foster inter-sectoral advocacy with other government ministries e.g. agriculture, forestry, business, industry.	HIGH POTENTIAL: Pilot new interventions and use for advocacy to co-opt other businesses.	HIGH POTENTIAL: Opportunities to work with employers of large companies, farms, plantations, agribusiness, extractive industry etc.
Seasonal farm workers	Planting or harvesting agricultural products. Low immunity. Mutually beneficial relationships with farm owners, maintain contact and repeat seasonal services.				
GOVT. AFFILIATED					
Security personnel	Military, police, border guards - who patrol along borders and other risk areas + accompanying families of personnel living in forest/border risk areas.	Through government structures. Can be difficult to monitor due to lack of open access to information.	HIGH POTENTIAL: Inter-sectoral advocacy. Long lasting nets/hammock nets/uniforms/repellents. Border-post interventions. Military clinic quantification. BCC for personnel/families.	LIMITED: Dependent on NGOs working with this group.	LIMITED: May be some role for institutional selling to government ministries.

TARGET GROUPS	GROUP PROFILE	OUTREACH POSSIBILITIES	PUBLIC SECTOR	CIVIL SOCIETY	PRIVATE SECTOR (excl. Civil society)
NON-AFFILIATED					
Ad-hoc labourers	Local residents - working outdoors on temporary/ad-hoc basis e.g. Road building crews; new land development workers.	DIFFICULT: No employer/organisation takes responsibility. Can be of illegal status.	VARIABLE: Depending on legal status and access to public health care.	POTENTIAL: Through community dispute/mediation groups; migrant learning centres etc.	POTENTIAL: If these groups are working, although low paid, some are receiving income and can access private sector to remain 'hidden' when necessary.
New settlers	Landless people, from other provinces, seeking uninhabited land. Low immunity. Often in remote locations and try to remain 'hidden'.				
Highly mobile labour	Opportunistic remote outdoor work. Loose groups, living in camps. May be gem miners, gold miners, wood cutters, stump miners etc.				
Short-term migrants	Economic migrants crossing borders for work. Low immunity. Often planting or harvesting agricultural products in short term. Often exploited through work.				

Annex 3: Status of tariffs on antimalarial commodities (Aug. 2010)⁶¹

COUNTRY	Tariff on bednets	Tariff on medicines	Tariff on RDTs	Tariff on IRS insecticides	Tariff on pumps for IRS
Bangladesh	X	OK	X	X	X
Bhutan	X	OK	X	X	X
India	X	X	X	X	X
Indonesia	X	X	X	X	X
Myanmar	X	X	X	OK	OK
Sri Lanka	X	OK	X	X	X
Thailand	X	-	X	-	X
Cambodia	X	OK	X	X	OK
China	X	X	X	X	X
Laos	X	X	X	X	X
Malaysia	X	OK	OK	OK	OK
Papua New Guinea	OK	OK	OK	OK	OK
Philippines	X	-	X	X	X
Rep. Korea	X	X	OK	X	X
Solomon Islands	X	X	X	X	X
Vanuatu	X	X	X	X	X
Vietnam	X	X	OK	-	-

Key:

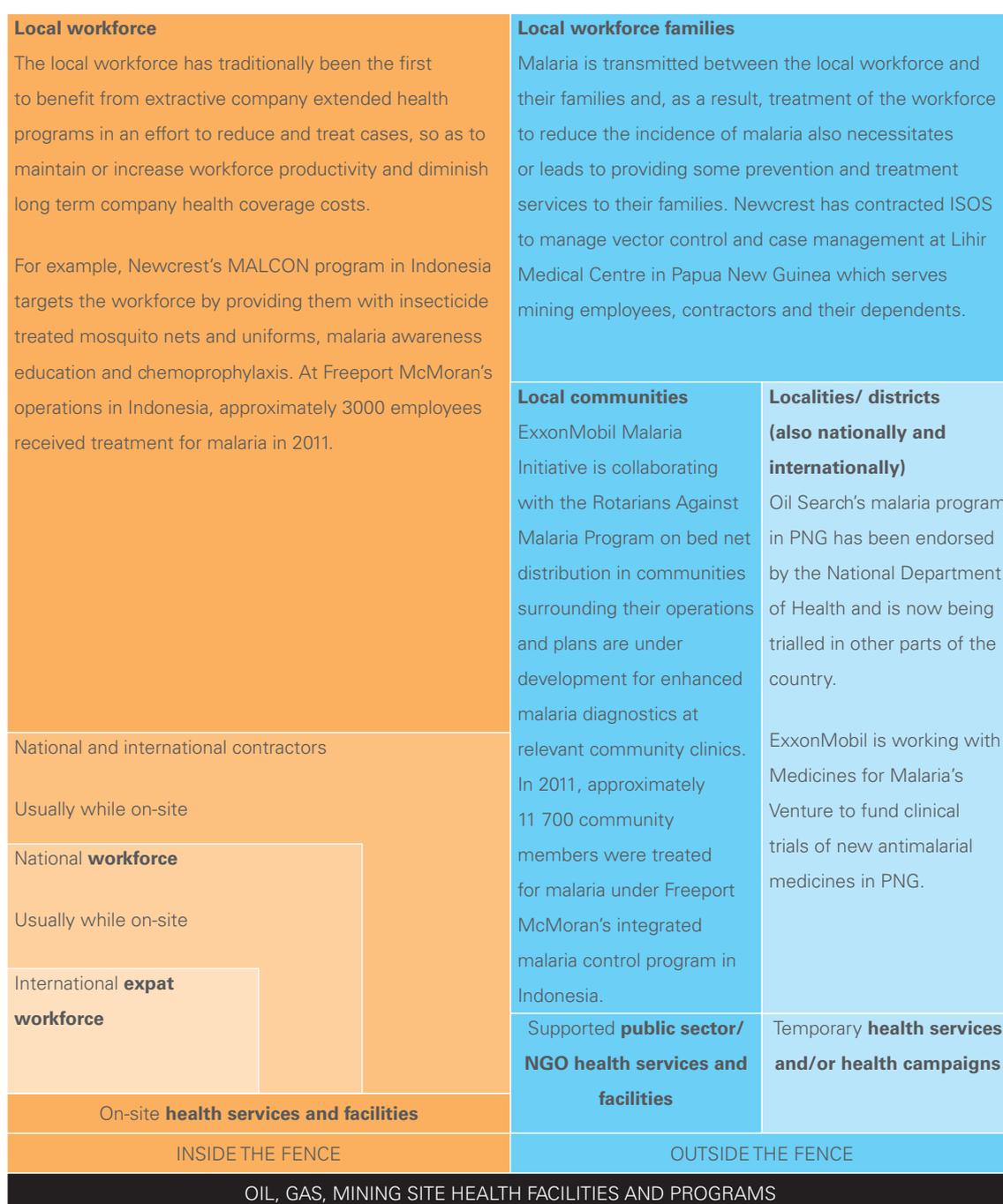
OK = tariff of 0%

X = tariff greater than 0%

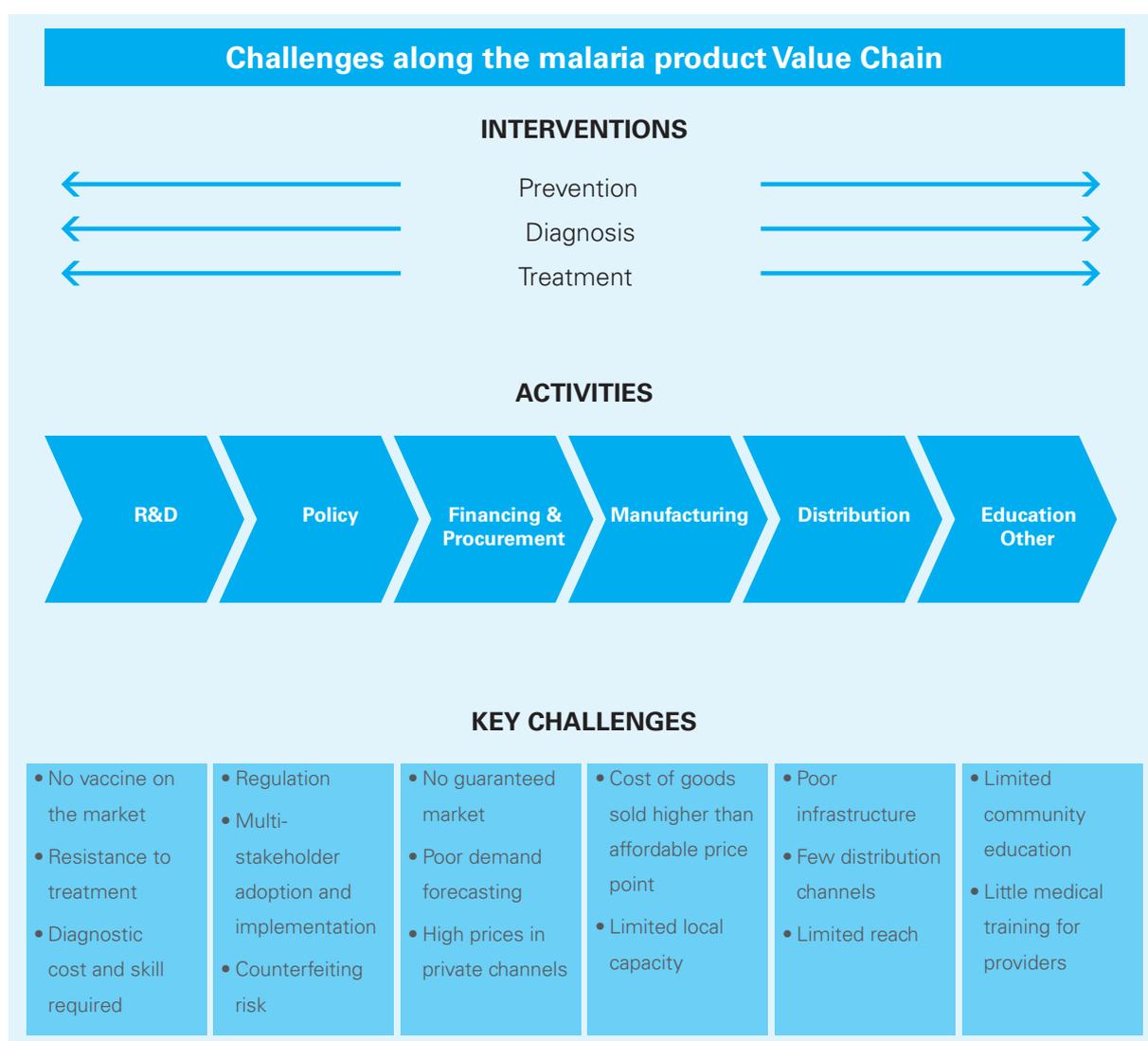
- = No Data

⁶¹ M-TAP

Annex 4: Extractive industry provided health care diagram



Annex 5: Illustrative diagram for a Value Chain Analysis⁶²



⁶² World Economic Forum, Harnessing Private Sector Capabilities to Meet Public Needs, (World Economic Forum, 2006).

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Notes

