



REGIONAL MALARIA AND OTHER COMMUNICABLE DISEASE THREATS TRUST FUND

FINAL REPORT

NOVEMBER 2018

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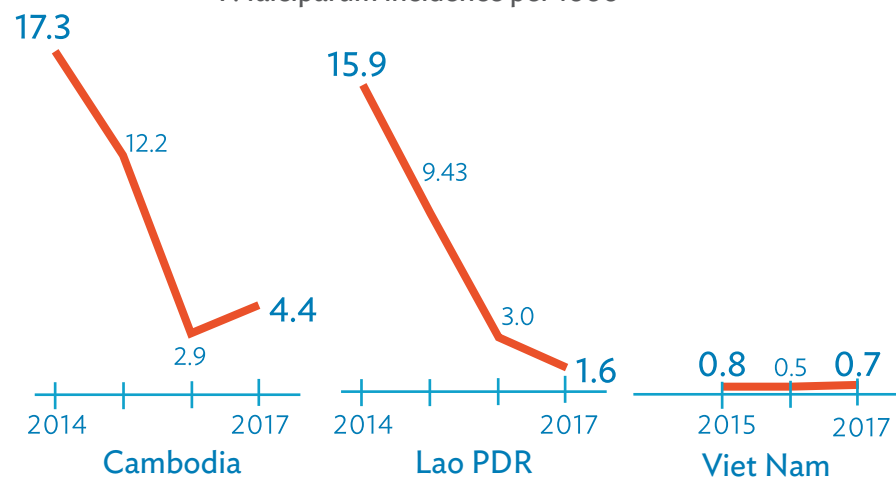
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KEY ACHIEVEMENTS

Malaria incidence significantly declined in high burdened project sites

P. falciparum incidence per 1000



14 Leaders

in Asia and the Pacific commit to the malaria elimination road map



Malaria elimination dashboard developed

to track progress toward the commitments



Investment cases and tool kits for financing malaria elimination

- National and regional investment cases
- Business cases for private sector engagement
- Malaria elimination transmission and costing model
- Malaria program efficiency analysis tool



12,090

Migrant and mobile populations (MMPs)

reached through community outreach events in Lao PDR and Myanmar



23,470

IEC materials developed and distributed



23,750

Mosquito protection commodities (including LLINs) distributed

97-99%

Proportion of reached MMPs aware of malaria transmission



Cross-border information exchange

Number of monthly disease information exchanged within cluster provinces in Cambodia, Lao PDR, and Viet Nam in 2017

291



4,186

Malaria workers, health workers, and peer educators

trained in Cambodia, Lao PDR, Myanmar, and Viet Nam



408

staff trained on malaria microscopy



New financing mechanisms for malaria elimination and addressing communicable disease threats



\$100 million First ADB health bond launched



ADB-Global Fund memorandum of understanding for blended financing



National Regulatory Agencies (NRAs) operational capacities strengthened in the GMS

Number of NRA staff trained

125

Pharmacovigilance

168

Medical device regulation

174

Chemistry, manufacturing and controls

176

Bioequivalence

49

Standardized approach to medicine reviews



Country and regional NRA capacity development road maps created



6 portable devices assessed on cost-effectiveness to detect malaria SF medicines

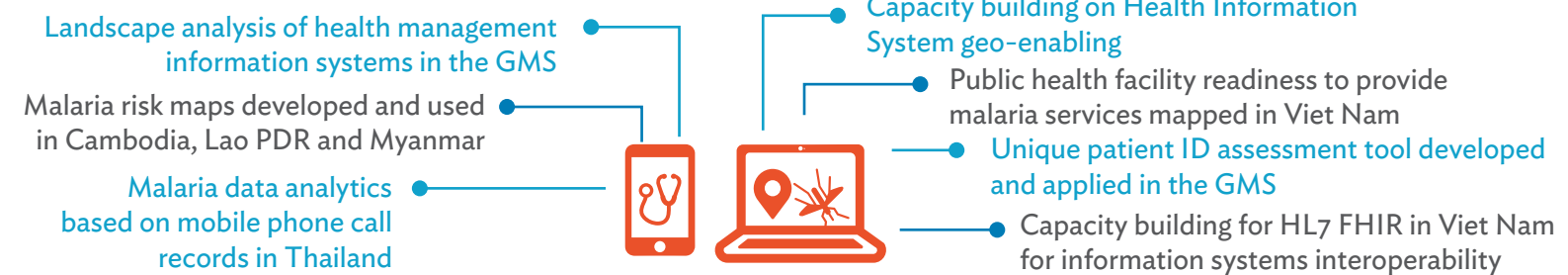


Regulatory officers from 22 countries trained on SF incidents and WHO reporting tool



Electronic drug registration information system established in Myanmar

Transformational digital interventions



Health Impact Assessment (HIA) curriculum

developed with Curtin University-WHO Collaborating Center on HIA

6

Universities in the GMS offered HIA certificate course targeting 262 future practitioners



696

government and nongovernment staff trained to meet the needs for effective HIAs



HIA training in ADB

- Included in the standard poverty and social analysis training
- Integrated into the Air Quality training
- ADB staff training on HIA are conducted in conjunction with existing staff training programs

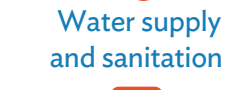
HIA demonstration in the GMS



Energy



special economic zones



Water supply and sanitation



Transport



Urban development



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ABBREVIATIONS

ADB	Asian Development Bank
ADF	Asian Development Fund
AeHIN	Asia eHealth Information Network
APLMA	Asia Pacific Leaders Malaria Alliance
AOP	annual operational plan
APMEN	Asia Pacific Malaria Elimination Network
CDC	communicable disease control
CoRE	Centre of Regulatory Excellence
CSO	civil society organization
DFAT	Department of Foreign Affairs and Trade, Australia
DFID	Department for International Development
DFTAD	The Department of Foreign Affairs, Trade and Development
DMC	developing member country
DMS	Data management system
eCDS	electronic communicable disease surveillance
eHealth	ICT in the health sector, also called “digital health”
FDA	Department of Food and Drug Administration
GAP	gender action plan
GIS	geographic information system
Global Fund/GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria
GMS	Greater Mekong Subregion
HIA	health impact assessment
HIE	health information exchange
HIGAF	health ICT governance architecture framework
HINARI	HINARI Access to Research in Health Programme
HIS	health information system
HISP	Health Information Systems Programme
HL7-FHIR	HL7 Fast Healthcare Interoperability Resources
ICT	information and communication technology
IEC	information, education and communication
IOM	International Organization for Migration
IRIMS	integrated regulatory information management system
LLIN	long lasting insecticidal nets
LOMWRU	Lao-Oxford-Mahosot Hospital Wellcome Trust Research Unit
M&E	monitoring and evaluation
mDMS	Mobile data management system
METCAP	Malaria Elimination Transmission and Costing in the Asia Pacific
MMP	mobile and migrant populations
MOH	Ministry of Health
MOHS	Ministry of Health and Sports

MORU	Mahidol Oxford Research Unit
MOU	memorandum of understanding
MPEAT	Malaria Program Efficiency Analysis Tool
NMCP	National Malaria Control Programme
NGO	nongovernment organization
NHL	National Health Laboratory
NRA	National Regulatory Agency
OCO	Office of Cofinancing Operations
Lao PDR	Lao People's Democratic Republic
PHMP	Public Health Management Plan
PMU	project management unit
PNG	Papua New Guinea
PPMU	provincial project management unit
PRC	People's Republic of China
RBF	results-based framework
R-CDTA	regional capacity development technical assistance
RECAP	Results for Malaria Elimination and Control of Communicable Disease Threats in Asia and the Pacific
RMTF	Regional Malaria and Other Communicable Disease Threats Trust Fund
RRP	Asia Pacific Regional Regulatory Partnership for Malaria Elimination
RRT	Rapid response team
SDG	Sustainable Development Goal
SEARO	Regional Office for South-East Asia
SERD	Southeast Asia Department
SEZ	Special Economic Zone
SF	substandard and falsified
SOP	standard operating procedure
TA	technical assistance
TGA	Therapeutic Goods Administration, Australia
UCSF/MEI	University of California, San Francisco Malaria Elimination Initiative
UHC	universal health coverage
URC	University Research Co.
US	United States
VMG	volunteer malaria group
WHO	World Health Organization
WPRO	Regional Office for the Western Pacific

EXECUTIVE SUMMARY

The Regional Malaria and Other Communicable Disease Threats Trust Fund (RMOTF) was set up in December 2013. Its remit was to support multicountry, cross-border and multisector responses to urgent malaria and other communicable disease issues, with a focus on the countries of the Greater Mekong Subregion (GMS).

In 2015 the fund moved from supporting the control of malaria to eliminating the disease as a public health threat. This shift was in response to growing resistance to artemisinin-based combination therapy, which was emerging in four GMS countries: Cambodia, Myanmar, Thailand and Viet Nam. The rationale was that achieving elimination in Asia and the Pacific would prevent resistance reaching the African continent.

Over the next 5 years, the project funded projects under six broad domains: leadership, financing, medicines, information systems, laboratory diagnostics and surveillance, and promotion and prevention.

Key achievements

- Galvanized malaria elimination leadership at the highest level and provided decision support for accountability;
- Introduced innovative mechanisms for malaria elimination financing and donor collaboration;
- Supported regulatory and disease control bodies to work more effectively, strengthen post-market surveillance of anti-malarials, and to collaborate with regional counterparts;
- Convened partners within countries and across borders to work toward the common goal of eliminating malaria;
- Stimulated the appetite for transformational digital interventions and improved capacity, resulting in increased surveillance and automated reporting of malaria and communicable diseases;
- Strengthened the role of health impact assessment for malaria prevention in infrastructure projects and special economic zones in border areas.

The Department of Foreign Affairs and Trade (Australia) and Department for International Development (United Kingdom) contributions came to a close in June 2018, but in each of the six domains, a sustainability pathway was left in place to ensure that the results continue to resonate, that the governments of each country involved at different levels, together with donor agencies, nongovernment organizations and the private sector, can continue to build on what has been achieved.

GOVERNANCE STRUCTURE

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1. INTRODUCTION

From Control to Elimination

When the Regional Malaria and Other Communicable Disease Threats Trust Fund (RMTF) was set up in December 2013, its remit was to support, for a five-year period, the Asian Development Bank's (ADB) developing member countries (DMCs) to develop multicountry, cross-border, and multisector responses to urgent malaria and other communicable disease issues. In 2015 the fund moved from supporting the control of malaria to eliminating the disease through a process of strengthening health systems that would also have an impact on other communicable disease threats.

Two factors led to this decision: first, growing resistance to artemisinin-based combination therapy—the last line of simple-to-use and effective malaria drugs—had been detected in four countries of the Greater Mekong Subregion (GMS): Cambodia, Myanmar, Thailand, and Viet Nam.

Second, it became clear that with the right health systems' building blocks in place, eliminating malaria was technically feasible in Asia and the Pacific. Elimination, as defined by the World Health Organization (WHO), is “the interruption of local transmission (i.e., reduction to zero incidence of indigenous cases) of a specified malaria parasite species in a defined geographical area.” Achieving this in Asia and the Pacific could prevent resistance reaching the African continent, where it would have devastating consequences and potentially reverse the gains in global malaria control made over the previous decade.

This shift in focus is aligned with the WHO Framework for Malaria Elimination, which calls on countries to put in place the tools and systems needed to reduce the disease burden of malaria and progress toward elimination as soon as possible.¹ These interventions include enhancing and optimizing vector control and case management; increasing the sensitivity and specificity of surveillance; accelerating transmission reduction, and investigating and clearing individual cases. All of these were addressed under the RMTF.

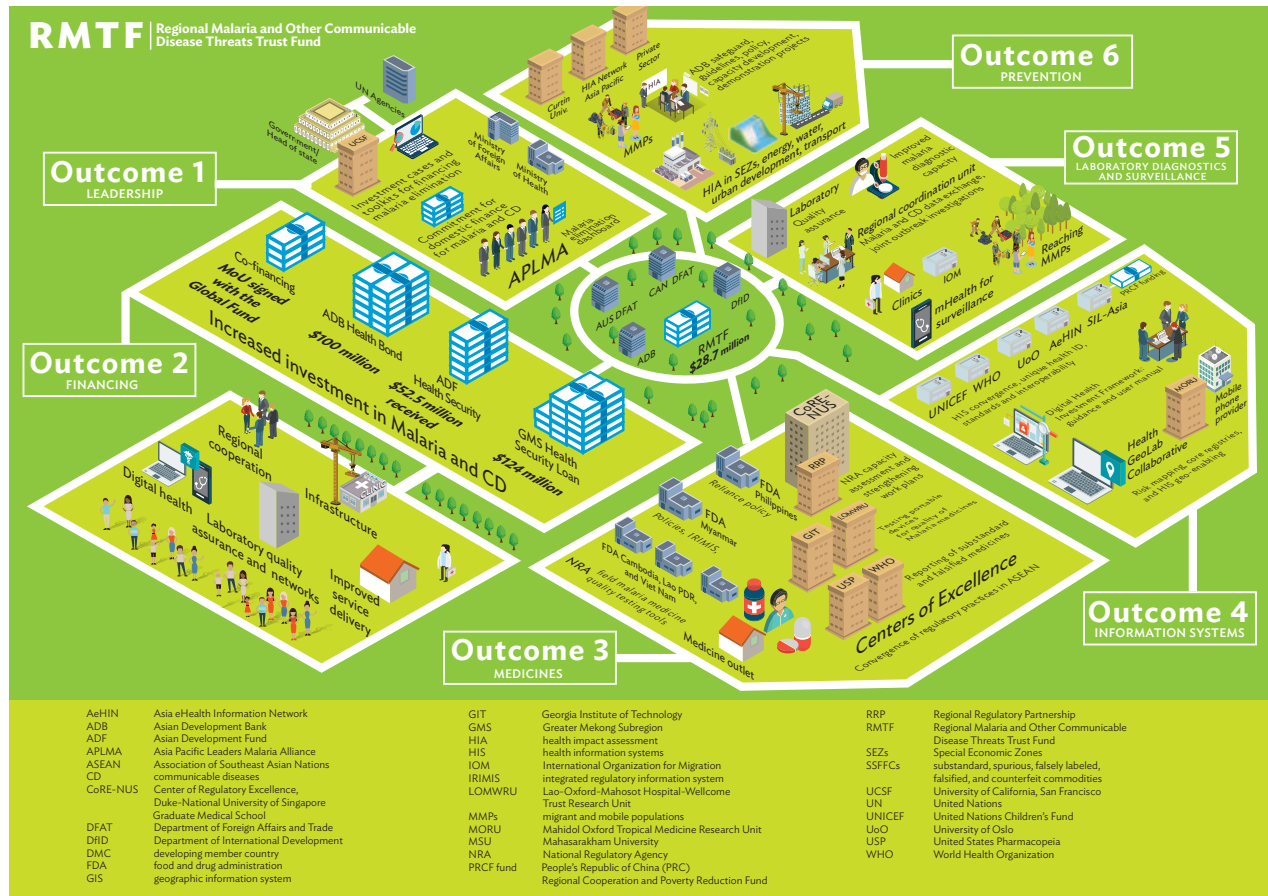
In turn, the fund's activities tied in with the health-related Sustainable Development Goals (SDGs) and targets, in particular SDG Target 3.3: “by 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases,” and SDG target 3.8: “achieving UHC, including access to quality essential health-care services and safe, effective, quality and affordable essential medicines.”²

The GMS countries overall have made great progress in controlling malaria. Data from the ministries of health in the recent years show that the Lao People's Democratic Republic (Lao PDR) had an 85% decline in its malaria incidence from 7.2 in 2014 to 1.2 cases per 1,000 population in 2017. The malaria incidence in Viet Nam in 2014 was already low at 0.1 cases per 1,000 population but was further reduced by 40% in 2017. Cambodia had 3.1 malaria cases per 1,000 population in 2014 and was significantly reduced to 1.6 cases per 1,000 in 2016. The country however experienced a surge in the number of malaria cases in 2017, which raised the incidence level back to 3.0 cases per 1,000.

¹ WHO. 2017. *A framework for malaria elimination*. Geneva: WHO.

² Sustainable Development Goal 3. <https://sustainabledevelopment.un.org/sdg3>
<http://www.who.int/malaria/publications/atoz/9789241511988/en/>

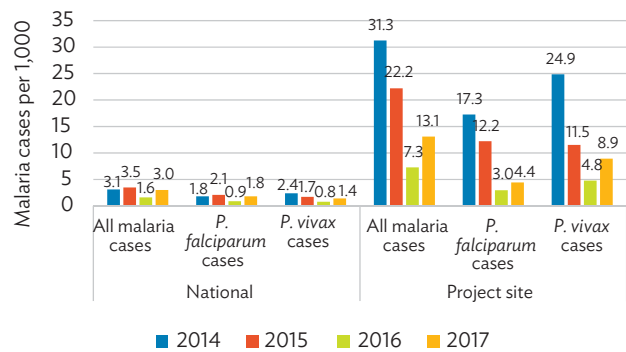
Figure 1: The RMTF Ecosystem



RMTF = Regional Malaria and Other Communicable Disease Threats Trust Fund.
Source: Authors.

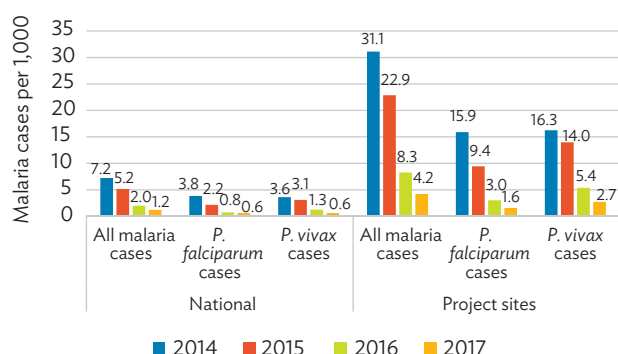
Malaria transmission in the GMS is mostly concentrated in hilly, forested areas, in border areas, and where forest goes and temporary migrants and seasonal workers reside. Such areas were targeted in the RMTF through the CDC2-AF. In the project sites of Cambodia, the malaria incidence of 31.3 cases per 1,000 in 2014, more than halved to 13.1 per 1,000 in 2017. In the Lao PDR project sites, malaria incidence was reduced by 86%, from 31.1 in 2014 to 4.2 cases per 1,000 in 2017. The malaria incidence in the Viet Nam project sites was already low at 1.4 in 2015 but was further reduced to 1.0 cases per 1,000 in 2017.

Figure 2: Cambodia - Malaria Incidence per 1,000 population



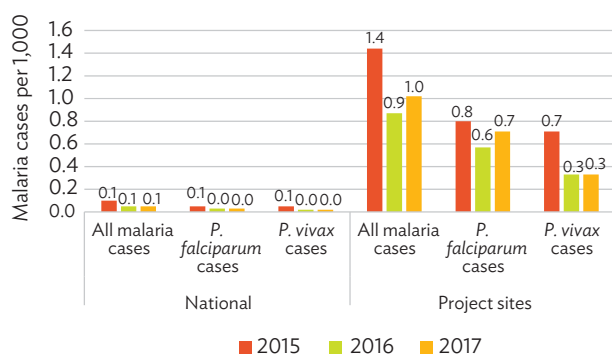
Source: Ministry of Health, Cambodia, provided August 2018.

Figure 3: Lao PDR - Malaria Incidence per 1,000 population



Lao PDR = Lao People's Democratic Republic
 Source: Ministry of Health, Lao People's Democratic Republic, provided August 2018.

Figure 4: Viet Nam - Malaria Incidence per 1,000 population



Source: Ministry of Health, Viet Nam, provided August 2018.

Asian Development Bank and Malaria Elimination

Health is an integral part of ADB's work, and under Strategy 2030, the bank's new strategy agenda, it is recognized as a key building block to achieve a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty.³ With its background in supporting regional health security, coupled with its commitment to investing in health, ADB is in a good position to

support malaria elimination by strengthening health systems in the region. ADB's established reputation and relationships with DMC governments, as well as its partnerships with other development agencies, the private sector, and civil society organizations (CSOs) have amplified the fund's impact.

Through engagement with ADB, DMCs gain access to ADB's technical assistance (TA) and grant funding, as well as to loans and innovative ways for countries to finance health systems strengthening. The RMTF was useful in catalyzing impact for malaria, but entrusting funds to ADB for malaria elimination also led to a return on investment beyond this goal. Many governments and donors are looking at integrative health programs, and are reaching for ways to strengthen health systems, both nationally and regionally. ADB had identified an emerging trend in government demand for health financing, to leverage past successes in vertical disease programs and begin to focus on integrated health sector and systems development.

In response to increasing demand for new types of financing to support integrated health goals, including malaria elimination, ADB engaged with the Global Fund to Fight AIDS, Tuberculosis and Malaria and other development partners. Through this consultative process with partners, donors, and governments, it became clear that funding for programs like malaria elimination required a new approach. This new approach built upon the successes of the RMTF to target blended financing for health. Partners such as the Global Fund recognize their investments are much more impactful over the long term when paired with ADB financing. This type of financing will also sustain results, such as strong health systems that prevent the reemergence of malaria.

Leadership, Collaboration, Innovation

The RMTF promoted political leadership on malaria elimination and related investments in health systems, including a higher level of sustainable domestic financing. It also mobilized more funds to tackle malaria and other communicable disease

³ ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila. <https://www.adb.org/documents/strategy-2030-prosperous-inclusive-resilient-sustainable-asia-pacific>

threats. Its projects contributed to the process of fostering more reliable supplies of quality medicines, improved data for evidence-based decision-making, and strengthened national malaria and other communicable disease threats programs.

Through its projects, RMTF advocated for a collaborative approach to malaria elimination that goes beyond the health sector and national governments to draw in the private sector, nongovernment agencies, and the donor community across multiple domains, with a focus on health systems strengthening, rather than on a single disease.

The fund's activities tackled malaria at multiple levels, from regional to national and subnational. For example, the fund boosted regional leadership on malaria elimination through its collaboration of the Asia Pacific Leaders Malaria Alliance (APLMA). RMTF projects also built regional learning networks for health impact assessment (HIA) of infrastructure projects, and in medicines regulation created a regional road map for regulatory systems strengthening. This in turn informed the work of a newly created Asia Pacific Regional Regulatory Partnership for Malaria Elimination (RRP). By providing additional financing to ADB's already well-established regional communicable disease control project, the fund was able to build on preexisting successes, especially related to financing activities and building capacity at the subnational level rather than starting from scratch to develop a regional health project.

At the national level, projects under the RMTF entailed widespread engagement with government ministries for policy dialog, advocacy, and planning, strengthening both capacity building and evidence-informed decision-making. While national level action is key, many malaria elimination initiatives are most effective at the subnational level. The fund's projects include subnational level malaria and communicable disease reporting, laboratory systems strengthening, access to innovative information and communication tools, post-market medicines surveillance, outreach to underserved and marginalized populations, and local-level training. The fund also supported malaria-specific operational research.

The Structure of the Regional Malaria and Other Communicable Disease Threats Trust Fund

The RMTF funded a range of projects under six distinct outcomes: leadership, financing, medicines, information technology, laboratory diagnostics and surveillance, and promotion and prevention. It took as its starting point the theory of change structure of the Department for International Development (DFID) of the United Kingdom, which sought to address gaps in regional cooperation, sustainable financing for regional public goods in health, adequate incentives and institutions for the medicines supply chain, timely and reliable data, and effective program management.

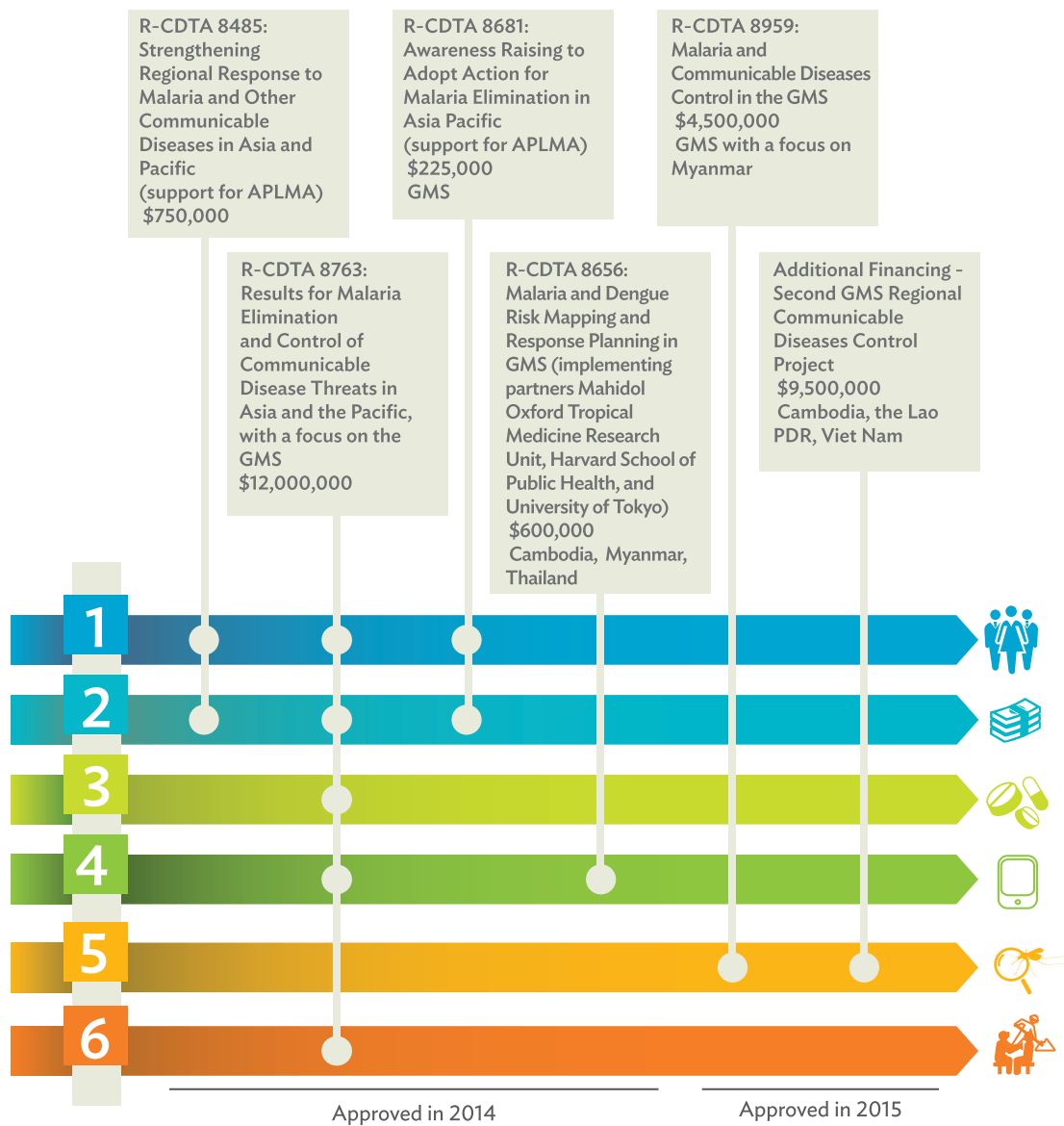
Projects were then developed under each of the outcomes, deliberately tailored to the prevailing malaria and other communicable disease, and health system landscape in each country. This bespoke approach enabled the fund to best meet the needs of each country, rather than using an overly simplistic, one-size-fits-all approach. While development banks and donor agencies bring their own unique expertise to every project they fund, engaging implementing partners and coordinating within a crowded development partner landscape is crucial to the success of a project. ADB took a pragmatic approach to this, partnering with whatever agencies could best support each project, be they international nongovernment organizations (NGOs), CSOs, academic institutions, government agencies, or individual expert consultants. Taken together, these six pillars of the RMTF coalesced to form a health system strengthening approach, and the fund supported countries to reach for attainment of universal health coverage (UHC).

The RMTF financed regional capacity development technical assistance (R-CDTA), standalone projects, and grant components of investment to improve health outcomes and increase health security by reducing the risk of malaria and other communicable disease threats in Asia and the Pacific.

The RMTF’s financing partners were the Government of Australia (Department of Foreign Affairs and Trade, \$15.8 million), the Government of Canada (Department of Foreign Affairs, Trade and Development, \$0.5 million), and the Government of the United Kingdom (DFID \$12.4m).

In total, the RMTF management has approved a total of \$18.075 million for five technical assistance projects, and \$9.5 million in additional financing for ADB’s Second GMS Regional Communicable Diseases Project (CDC2) (Figure 5).

Figure 5: Projects of the Regional Malaria and Other Communicable Disease Threats Trust Fund



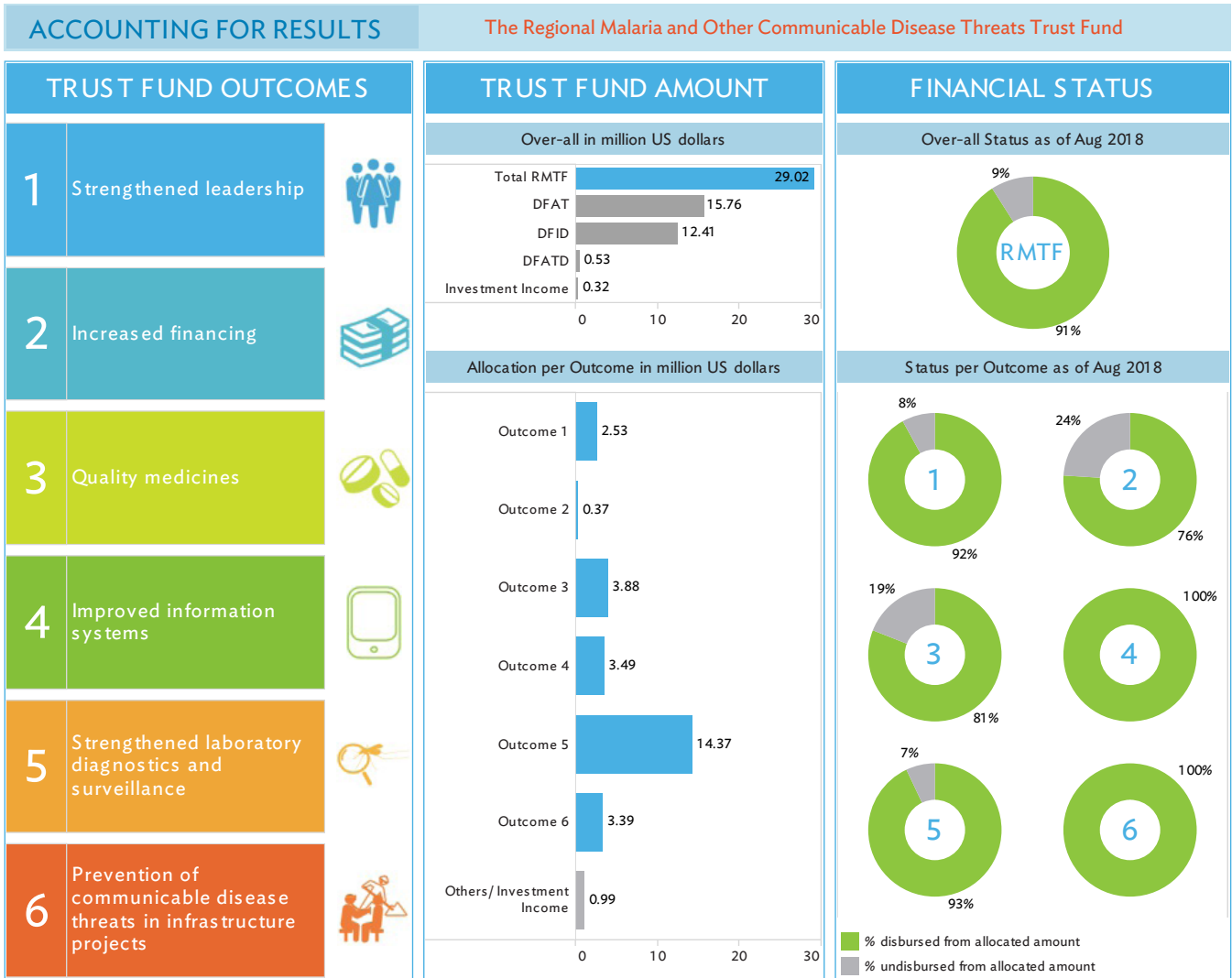
Source: Authors.

2. FUND UTILIZATION AND MANAGEMENT

The donors' total investment of \$28.70 million and interest income of \$316,764 were used to mobilize consultants, procure equipment, provide malaria-specific health services, conduct workshops and training, and cover costs directly related to trust fund administration and management. Total support by the RMTF to specific activities of five technical assistance and three grant projects in the GMS countries amounted to \$28.33 million (Annex D). The bulk of the unspent balance of the RMTF, \$685,703, were savings from the planned activities of CDC2-Additional Financing which were not pursued based on the advice of the governments of Cambodia, the Lao PDR, and Viet Nam. It was agreed with The Department of Foreign Affairs, Trade and Development (DFATD) Canada that its contribution, amounting to \$531,916, can remain in the fund beyond 2018

and does not need to be returned. This leaves less than \$150,000 from the income earned from investments from the RMTF under the Department for International Development (DFID) of the United Kingdom and Department of Foreign Affairs and Trade, Australia (DFAT) contributions.

The ADB has reported quarterly to the donors on the status of RMTF utilization using a financial reporting system that is different from that used by the donors. Because the donors found ADB's reporting system complicated, a financial dashboard was designed for donors' easy understanding. The RMTF financial dashboard is an RMTF financial management tool that visually summarizes the quarterly comparative trends of RMTF disbursements from 2014 to 2018, and the results of Outcome 1 to Outcome 6 in the GMS countries.



3. RESULTS BY OUTCOME

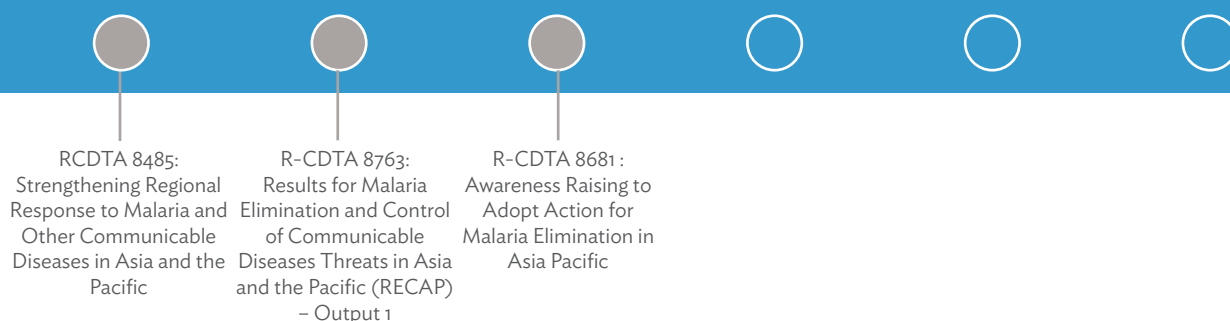
The following section presents the results and achievements for each of the RMTF six outcomes. These are presented through a financial dashboard, results-based framework indicator table, list of TA projects contributing to the outcome, and

description of key achievements. Details of each RMTF output and activity are elaborated in the results-based framework (RBF) (Annex A) and project work plans.

1

LEADERSHIP

Strengthened leadership, decision-making and accountability for malaria elimination and addressing communicable disease threats.



OUTCOME 1: Strengthened leadership, decision-making and accountability for malaria elimination and addressing communicable disease threats

KEY OUTCOMES

Increased commitment and collaboration for malaria elimination and addressing communicable disease threats

Improved use of information for decision-making and accountability to progress toward malaria elimination and addressing communicable disease threats

TRUST FUND ALLOCATION

Total allocation in million US\$ **2.53** Share in RMTF **9%**

OUTCOME RESULTS

Countries that have endorsed the malaria elimination roadmap (As of Aug 2018)

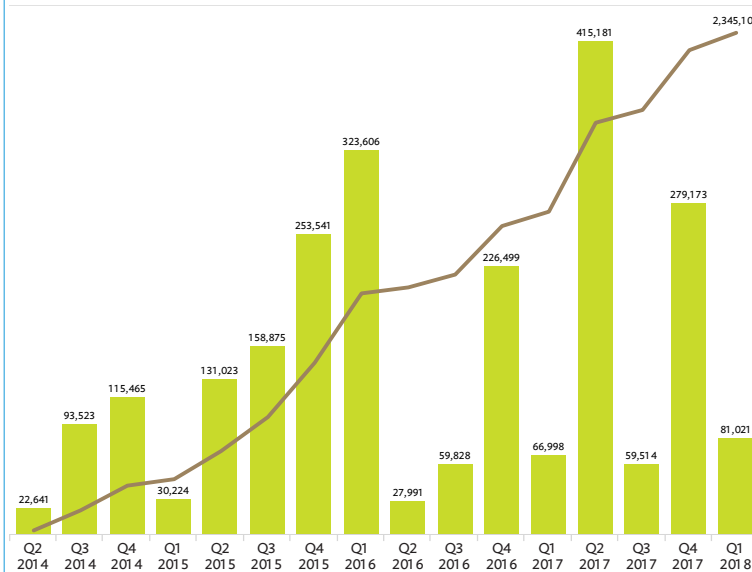
Afghanistan	Australia	Bangladesh	Bhutan
Brunei Darussalam	Cambodia	People's Republic of China	India
Indonesia	Japan	Lao PDR	Malaysia
Myanmar	Democratic People's Republic of Korea	Nepal	New Zealand
Pakistan	Philippines	PNG	Russia
Republic of Korea	Singapore	Solomon Islands	Thailand
Timor-Leste	US	Vanuatu	Viet Nam

Countries
■ Malaria-endemic country
■ Donor country

Endorsement status
■ Endorsed
■ Has not endorsed

Note: List of countries provided by Asia Pacific Leaders Malaria Alliance secretariat

DISBURSEMENT HISTORY and PROJECTION



■ Quarterly disbursements
 — Cumulative disbursement

Note: Moved UCSF financial data from Outcome 2 to Outcome 1. UCSF outputs contribute better under Outcome 1 toward improved use of information for decision-making and accountability.

Other key achievements

- Malaria Elimination Dashboard
- Investment cases for financing malaria elimination program and the Malaria Program Efficiency Analysis Tool developed

Rationale

Globally, malaria infected 216 million people in 91 countries in 2016, leading to 445,000 deaths.⁴ Progress toward malaria elimination has stalled in many countries, and the world is failing to keep pace with WHO's 2020 milestones that can bring about a 40% reduction in incidence and death rates by 2030. More than 2.1 billion people in Asia and

the Pacific are at risk of malaria, including 152.3 million in the GMS, making the disease a major regional public health concern. According to WHO estimates for Asia and the Pacific, there were 16.2 million malaria cases in 2016, and 30,300 deaths. With such a large-scale threat, eliminating malaria demands political and financial commitment at the highest level, for both national responses, and for regional partnerships and coordination of efforts.

Table 1: Results of Outcome 1.1

Outcome 1.1 Increased commitment and collaboration for malaria elimination and addressing communicable disease threats											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	2017					2016	2017		
1. Number of malaria-endemic countries that endorsed the malaria elimination road map	0	13	14*	21**	●	1. Malaria elimination road map developed	No	Yes	Yes	Yes	●
2. Number of donor countries that endorsed the malaria elimination road map	0	7	7***	7	●						

Progress: ● Achieved or on track

* Cambodia, India, Indonesia, Lao People's Democratic Republic Malaysia, Myanmar, Papua New Guinea, People's Republic of China, Philippines, Republic of Korea, Solomon Islands, Thailand, Vanuatu, Viet Nam

** APLMA's 2020 target

*** Australia, Brunei Darussalam, Japan, New Zealand, Russian Federation, Singapore, United States

Source: Authors.

Asia Pacific Leaders Malaria Alliance Support

Under the leadership component of the RMTF, APLMA—an affiliation of Asian and Pacific heads of government, housed within ADB from its establishment 2014 to 2016—was supported with technical input. APLMA is now a full fledged independent entity that works to accelerate progress against malaria and to eliminate it in the region by 2030. APLMA has also been financed directly by DFAT and the Bill & Melinda Gates Foundation in addition to the collaboration and specific technical support under the RMTF.

With support under the RMTF, APLMA has introduced the Leaders' Dashboard, a decision and accountability tool that provides visibility to national and regional progress toward malaria elimination

targets, as well as fulfillment of priority actions and identification of areas requiring attention. Support was also provided to strengthen the investment case of malaria elimination.

Investment Cases

The RMTF competitively recruited the University of California San Francisco Malaria Elimination Initiative (UCSF/MEI) to develop a series of investment cases and a toolkit for financing malaria elimination programs. The investment cases aim to generate evidence around optimal ways to increase and expand the amount of sustainable financing in support of malaria elimination. National and regional policymakers can use this evidence to inform malaria program budgeting, strategic planning, and advocacy for domestic resource

⁴ WHO. 2018. *World Malaria Day 2018: Ready to beat malaria*. Geneva: WHO. <http://www.who.int/malaria/media/world-malaria-day-2018/en/>

Table 2: Results of Outcome 1.2

Outcome 1.2 Improved use of information for decision-making and accountability for malaria elimination and addressing communicable disease threats											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	2017					2016	2017		
1. Malaria Elimination Dashboard used to inform high-level regional policy dialog on malaria elimination	No	No	Yes	Yes	●	1. Malaria Elimination Dashboard prototype	No	Yes	Yes	Yes	●
						2. Number of countries with data compiled from the World Health Organization (WHO) for the technical annex of the Malaria Elimination Dashboard	0	22	22	22	●
						3. Number of countries with data compiled for Malaria Elimination Dashboard indicators	0	4	22	22	●
						4. Malaria Elimination Dashboard finalized	No	No	No	Yes	●
2. Investment cases and toolkit results used to inform high-level regional policy dialog on malaria financing	No	No	Yes	Yes	●	1. Costing framework and tools developed*	No	Yes	Yes	Yes	●
						2. Number of countries/ subregion with costing for malaria elimination* (BAN, IND, PNG, GMS)	0	2	2	4	●
						3. Number of country/ subregional investment cases developed* (BAN, IND, PNG, GMS)	0	0	4	4	●
						4. Number of business cases for private sector investment in malaria control and elimination* (BAN/IND/PNG and GMS)	0	0	2	2	●
						5. Malaria program efficiency analysis tool (MPEAT)*	0	0	1	1	●
						6. Recommendations developed on financing options for the Asia and Pacific Region*	No	No	Yes	Yes	●

Progress: ● Achieved at least 95% of target

BAN = Bangladesh, GMS = Greater Mekong Subregion, IND = India.

* Upon review of the logical flow of outputs and outcomes, these outputs that were previously tracked under Outcome 2 (Financing) are moved here as these better contribute toward improved use of information for decision-making and accountability for malaria elimination and addressing communicable disease
Source: Authors.

mobilization. The investment cases have since been used by both APLMA and ADB in policy dialog with countries and have also informed other parts of the RMTF's work, including the financing component, to help malaria program managers collect, organize, and track data points related to the technical efficiency of a malaria program.

National investment cases were commissioned for Bangladesh, Indonesia, and Papua New Guinea (PNG); two regional investment cases, one for the Asia and Pacific region and another specifically for the GMS, with estimates on the cost and economic and financial returns of malaria elimination through 2030; and business cases for private sector engagement in malaria elimination and communicable disease control in Bangladesh, Indonesia, PNG, and the GMS.

The RMTF also supported the development of the Malaria Program Efficiency Analysis Tool (MPEAT), to help malaria program managers collect, organize, and track data points related to the technical efficiency of a malaria program. The MPEAT has been used in Bangladesh, Indonesia, and PNG. In Bangladesh and Indonesia MPEAT was used to identify areas that need strengthening, to maximize value, reduce waste, and ultimately save resources. In the Philippines, the costing tool was used to help navigate the country's transition from Global Fund grant support to domestic financing for malaria elimination.

The tool is designed to be used in conjunction with the Malaria Elimination Transmission and Costing in the Asia Pacific (METCAP), a transmission

model that measures allocative efficiency, created by Mahidol Oxford Tropical Medicine Research Unit (MORU), in collaboration with the USCF and the University of Cape Town. The outputs of the METCAP have been transformed into an online interactive mobile application that generates reader-friendly graphs and charts showing changes in malaria morbidity and mortality and associated program costs under different intervention scenarios.

Enabling Factors

The Leaders' Dashboard was an effective accountability tool, and the investment cases gave much-needed tangible evidence of the potential beneficial impact of malaria elimination. ADB's involvement brought each country's ministry of finance to the table, which gave APLMA a level of reach that it could not have otherwise attained.

Next Steps and Sustainability Pathway

APLMA is now accepted as a legitimate policy platform, and DFAT also continues to support it. The Malaria Elimination Dashboard will hold leaders accountable, as well as supporting advocacy and communication to keep the malaria agenda active.

The partnership with APLMA under the RMTF also supported the collaboration with the Global Fund, which led to the signing of a memorandum of understanding (MOU), between ADB and the Global Fund to Fight AIDS, Tuberculosis and Malaria for a proposed regional financing facility (see p. 14).

2

FINANCING


Increased financing for malaria elimination and addressing communicable disease threats



R-CDTA 8763:
Results for Malaria
Elimination and Control of
Communicable Diseases
Threats in Asia and the
Pacific (RECAP) – Output 2

OUTCOME 2: Increased funds for malaria elimination and addressing communicable disease threats

KEY OUTCOMES



- Increased investments for malaria elimination and addressing communicable disease threats
- Increased domestic funds for malaria elimination

TRUST FUND ALLOCATION

Total allocation in million US\$	0.37	Share in RMTF	1%
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OUTCOME RESULTS

Amount of ADB grants made available for malaria elimination and addressing communicable disease threats			Amount of country loans for malaria elimination and addressing communicable disease threats		
2014 Baseline	May 2017 Status	2017 Target	2014 Baseline	May 2017 Status	2017 Target
22m\$	83m\$	80m\$	27m\$	144m\$	120m\$

Other key achievements

- New innovative mechanisms that mobilized financing such as ADB's first Health Bond of \$100M and ADB-Global Fund MOU

DISBURSEMENT HISTORY and PROJECTION

Quarter	Quarterly disbursements	Cumulative disbursements
Q2 2015	15,321	
Q4 2015	519	
Q4 2016	43,838	
Q1 2017	26,326	
Q2 2017	17,841	
Q3 2017	116,699	
Q4 2017	14,828	
Q1 2018	16,717	
Q2 2018	25,044	277,133

Note: Moved UCSF financial data from Outcome 2 to Outcome 1. UCSF outputs contribute better under Outcome 1 toward improved use of information for decision-making and accountability.

Rationale

Malaria elimination costs money, but the human and financial cost of underfunding is far higher. Securing funding entails both innovative approaches to sustainable health-care financing and ensuring that existing investments work smarter and are sustainable to achieve the most impact.

Mobilizing Financing

In 2015 the fund allocated \$9.5 million to an existing project in Cambodia, the Lao PDR, and Viet Nam. However, it was the use of RMTF funding as a catalyst that enabled the fund to both focus on malaria, and to greatly amplify its impact, by raising additional ADB resources through the development of new financing mechanisms to support efforts for malaria elimination and addressing communicable disease threats.

A total of \$52.5 million in grants was mobilized for health security measures from the Asian Development Fund (ADF), as well as an additional \$125 million worth of loans and grants for health security in GMS countries and, most notably, the issuance of ADB's first health bond. The private placement of \$100 million issued in March 2017 was purchased by the Dai-ichi Life Insurance Company, Limited, making it the world's first institutional investor to buy a bond that supports ADB's health

program. The bond will support lending to countries on targeted health financing, including malaria and communicable disease programs, and ADB will continue to support the bond pipeline process for potential subsequent issues.

Landmark Collaboration

In late 2017, against a backdrop of Asia and the Pacific countries previously eligible for Global Fund grants transitioning to domestic responsibility for malaria and other communicable disease investments, the Global Fund and ADB signed a landmark MOU to find common ground and align malaria and other communicable disease funding opportunities. The MOU, signed in November 2017, was the first of its kind between the Global Fund and a development bank. The Global Fund/ADB MOU promotes ongoing coordination and future cofinancing between the two institutions, directly through projects and also through a new regional fund. There is already a project pipeline targeting health systems development and strengthening. Cofinancing opportunities for Bhutan, PNG, and Sri Lanka, as well as the GMS countries have already been mapped as a result of the MOU. The model is also proof of concept for ADB to collaborate with other donors on other health projects in future, beyond malaria, based on country needs and donor priorities.

Table 3: Results of Outcome 2

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. Amount of ADB grants made available for malaria elimination and addressing communicable disease threats	\$22.0m	\$82.5m*	\$82.5m*	\$80.0m	●	1. ADF health security grants for group A and B countries mobilized (\$52.5m)	No	Yes	Yes	Yes	●
2. Amount of country loans for malaria elimination and addressing communicable disease threats	\$27.0m	\$144.0m*	\$144.0m*	\$120.0m	●	2. GMS health security funds approved (\$117m as loan and \$8m as grant)	No	Yes	Yes	Yes	●
						3. ADB Health Bond launched (\$100m OCR)	No	No	Yes	Yes	●

Progress: ● Achieved at least 95% of target * Cumulative amount

ADB = Asian Development Bank, ADF = Asian Development Fund, GMS = Greater Mekong Subregion, m = million, OCR = ordinary capital resources.

Source: Authors.

Enabling Factors

Having a clear understanding of national government priorities and constraints, and establishing how public–private partnerships could appeal to both private and public sectors, paid off in terms of obtaining buy-in from both within ADB and with external partners. The success of the financing component is also a testament to the way in which the six outcomes worked together: the strong backdrop of projects that the RMTF had already developed, including the work done on what investments are needed to eliminate malaria, and the pipeline of upcoming projects gave much-needed traction to leverage the broader health sector.

Next Steps and Sustainability Pathway

A legal agreement between ADB and the Global Fund has been drafted for the design of the new Regional Health Fund. This fund will potentially finance priority strategic regional activities, provide support to countries in the region with

the highest malaria burden and least capacity to secure domestic funding, and scale up investments in national programs. It will meet demand for structured blended finance, allowing for integrated health sector development through concessional loans and innovative finance structures, including results-based grants, risk transfer mechanisms, and loan buy-downs. The vision is to provide a one-stop blended finance shop for governments to access finance that targets whole-system health programs. As a result, specific regional goals such as malaria elimination will also be expedited—with sustainable and long-term results—and health systems strengthened.

In addition, the health bond process was set up in a way that can be replicated, either for other health issuances or for related themes.

ADB has committed to health sector investment by increasing the health pipeline, providing substantial technical assistance, and integrating health in ADB country partnership strategies. The ADB Strategy 2030 also provides ample opportunity to leverage ADB's strong infrastructure footprint for the health sector.

MEDICINES

Improved regulatory capacity to support increased availability and use of quality assured medicines for malaria and other communicable diseases




R-CDTA 8763:

Results for Malaria Elimination and Control of Communicable Diseases Threats in Asia and the Pacific (RECAP)
Output 2 availability and use of quality assured commodities

OUTCOME 3: Improved quality assurance and post-market surveillance of medicines for malaria and other communicable diseases

KEY OUTCOMES



- Improved operational capacity of national regulatory agencies
- Improved post-market surveillance of medicines for malaria and other communicable diseases

TRUST FUND ALLOCATION

Total allocation in million US\$	3.88	Share in RMTF	13%
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OUTPUT RESULTS

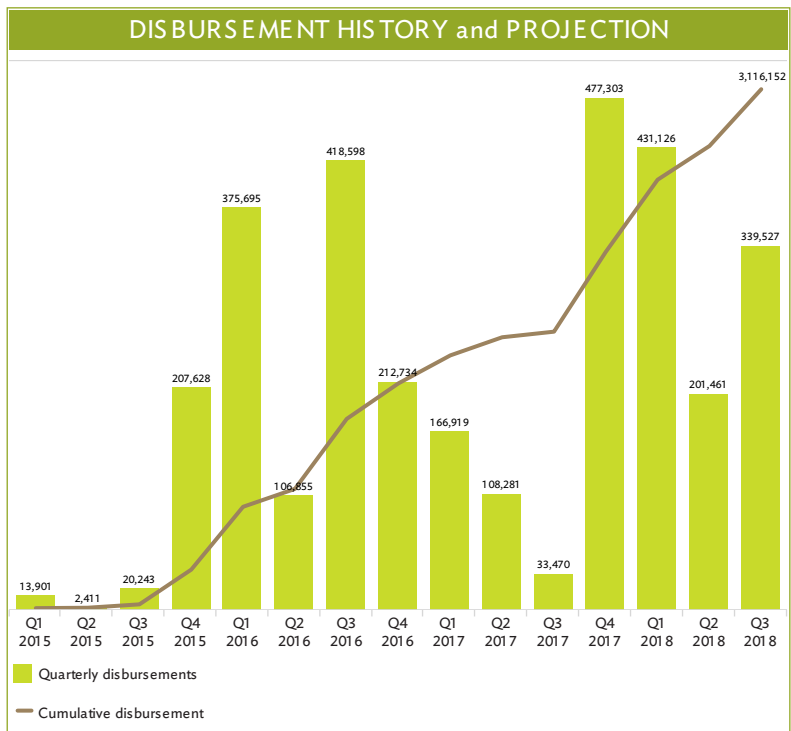
Status as of Aug 2018

	Completed national regulatory authority capacity assessment	Developed regulatory systems strengthening plan
Cambodia	●	●
Lao PDR	●	●
Myanmar	●	●
Thailand	●	●
Viet Nam	●	●

● Accomplished

Other key achievements

- Country assesment reports and roadmaps through collaboration with Centre of Regulatory Excellence
- Cost-effectiveness analysis of portable detection tools for substandard and falsified medicines
- Electronic registration information system and tablet-based system and database for post-marketing surveillance of malaria medicines for Myanmar Food and Drug Administration



Rationale

Eliminating malaria requires reliable supplies of safe and efficacious treatments delivered to where they are needed, but the market is plagued by substandard and falsified (SF) medicines. This undermines the work of the Global Fund to Fight AIDS, Tuberculosis and Malaria, and other development agencies bringing malaria medicines to where they are needed. Better regulation and post-marketing surveillance of malaria medicines is key to addressing this issue. This in turn requires strong national regulatory agencies (NRAs) with effective tools for testing and post-market surveillance of malaria medicines, as well as collaboration with the global community of practice tackling the international trade in SF medical products.

Regulatory Systems Strengthening

Many NRAs in Asia and the Pacific struggle to cope with marketing approvals of new health products, inspections of manufacturing and distribution facilities, and ensuring the continued quality of medicines and medical devices throughout the supply chain.⁵ The RMTF supported regulatory systems strengthening through collaboration with the Centre of Regulatory Excellence (CoRE), a regional capacity-building center and partner-coordinating platform for regulatory systems strengthening and convergence for Southeast Asian DMCs.

CoRE developed individual country assessment reports and road maps, which were further analyzed to develop a regional capacity development road

Table 4: Results of Outcome 3.1

Outcome 3.1 Improved operational capacity of national regulatory agencies (NRAs)											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. Number of countries with improved operational regulatory capacity	0	0	3*	3	●	1. Number of countries with NRA capacity profiles (CAM, LAO, MYA, THA, VIE)	0	3	5	5	●
						2. Number of countries with NRA capacity strengthening road maps (CAM, LAO, MYA, THA, VIE)	0	0	5	5	●
						3. Training modules developed	No	No	Yes	Yes	●
						4. Number of countries with NRA staff trained on priority regulatory issues and gaps	0	0	5	5	●

Progress: ● Achieved at least 95% of target

CAM = Cambodia, LAO = Lao People's Democratic Republic, MYA = Myanmar, THA = Thailand, VIE = Viet Nam.

* Cambodia, the Lao PDR, and Myanmar built capacity based on the Centre of Regulatory Excellence (CoRE) needs assessment, which helped identify areas of focus and improve partner coordination. The trainings conducted for country representatives and the road map developed all encapsulate capacity building.

Additionally, the targeted technical support and work in Myanmar had a direct impact on the operational capacity of its Food and Drug Administration and additional activities addressing targeted monitoring of the quality of medicines on the market, linking the quality control laboratory into the electronic information system and developing the basis of a national drug safety strategy and pharmacovigilance system.

Source: Authors.

⁵ ADB. 2014. Better Regulation of Medicines Means Stronger Regional Health Security. *ADB Briefs* No. 54. April. Manila.

Table 5: Results of Outcome 3.2

Outcome 3.2 Improved post-market surveillance of medicines for malaria and other communicable diseases											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. Number of countries piloting new field detection tools	0	0	1	1	●	SF field detection tools					
						1. Formal relationships with global and local research institutions established	No	Yes	Yes	Yes	●
						2. Library of active ingredients and finished product profiles developed	No	No	Yes	Yes	●
						3. Report on results of testing and cost-effectiveness evaluation of field detection tools	No	No	Yes	Yes	●
						4. Recommendations on cost-effective post-market surveillance field tools for detecting SF developed	No	No	Yes	Yes	●
2. Number of WPRO and SEARO countries started to report to the global substandard and falsified (SF) medical products reporting mechanism*	0	6	10	5	●	SF reporting					
						1. Number of countries with staff trained on the WHO global SF reporting mechanism	0	22	22	22	●

Progress: ● Achieved at least 95% of target

SEARO = Regional Office for South-East Asia, WPRO = Regional Office for the Western Pacific, WHO = World Health Organization.

* WHO does not divulge information on reporting by individual countries due to confidentiality rules.

Source: Authors.

map, focusing on needs that are common among the five GMS countries. Further improvements in the operational capacity of NRAs in the GMS, while meeting their diverse needs, will require a coordinated effort by development partners, and with this in mind, the regional road map was shared with the RRP and the information was subsequently incorporated into the RRP workplan.

Medicines Safety

By sensitizing NRAs to the ways in which SF medical products contribute to artemisinin resistance and the danger this poses to malaria elimination efforts, the RMTF medicines component has supported countries to participate in the WHO monitoring mechanism for SF products. The training provided jointly with WHO led to improved reporting of SF

products into the WHO Global SF medical product reporting mechanism. In addition, six countries in the WHO Western Pacific Region and South-East Region have since started to report SF products for the first time.

Malaria Medicines Field Testing

The RMTF also funded the Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU) to test portable devices for detecting anti-malaria medicine quality in both controlled and field conditions. This research led to advice and strategic recommendations both for DMCs looking to invest in such devices, and to device developers to make them more fit for purpose. The devices were piloted with the Lao PDR NRA, which provided invaluable insight into their usability in the

field by resource-constrained NRA when testing antimalarial medications.

Myanmar Regulatory Reform

Myanmar's regulatory agency, Food and Drug Administration (FDA), Myanmar, relied on a paper-based medicines registration, and the agency's systems did not enable it to conduct effective post-marketing surveillance of malaria medicines, or efficiently bring new medicines to market. In late 2017, ADB worked with the regulatory agency, FDA, Myanmar, to move its paper-based registration system online to an integrated regulatory information management system (IRIMS), a digital platform that processes, stores, retrieves and shares information on regulatory activities. This is vital to ensuring the country can improve its supplies of safe, reliable, high-quality antimalarial medicines, a key facet of malaria elimination efforts.

By mid-2018, an online-only product registration application process was in place, including training of the private sector applicants, manufacturers, and agents. As part of establishing an IRIMS, the FDAs' online databases were linked to those for the management of facility inspections and of quality control (QC) laboratories.

National QC lab and inspectors can now use a tablet-based system to connect to the central registration database to know which products are registered, and to directly upload images and videos of the facility they inspect, along with the inspection report and follow-up action. The FDA also reviewed its existing list of approved products, to compare them with those used by reference authorities. After this review, the online medicines registration system was set up to automatically trigger an alert on any products submitted for registration that contain banned or obsolete active ingredients. Product information documents, which describe a medicine's indications, contraindications, dosages, and warnings, will also rely on reference texts obtained from the Therapeutic Goods Administration, Australia (TGA).

Enabling Factors

Recognizing NRAs as partners and key stakeholders in public health, and working with them together with technical agencies, especially WHO, was key to the success of this component. Coordinating efforts with other development partners ensured messaging to NRAs and training were aligned. CoRE was well placed to gain the trust and attention of NRAs, and to ensure that this newly established entity's work was aligned with the needs of NRAs. Similarly, LOMWRU has key expert researchers in the field and is based in one of the GMS countries with close links to the regulatory agency there, which was helpful.

In Myanmar, one of the key enablers was the fact that there was little in place already, making it relatively easy to introduce a new system. There was also an alignment of interests in the new online product registration system, as registrants also find the online system and standardized terminology it easier and cheaper to use. Inspectors in the field are now able to check which antimalarial are registered, and what the packaging should look like, which makes it easier for them to identify SF products.

Next Steps and Sustainability Pathway

Implementation of recommendations for using portable testing devices still requires GMS countries to develop better policies on post-market surveillance and build the capacity of field inspectors who can act when suspected falsified and substandard medicines are identified. More understanding of the root causes of substandard medicines is needed to ascertain whether it is due to, for example, low-quality medicines entering the market, or subsequent incorrect storage along the supply chain.

While the portable devices that were assessed showed high sensitivity to falsified medicines, these devices were not optimal for detecting substandard medicines, yet in the Lao PDR, substandard malaria drugs are more prevalent than falsified ones in

registered drug outlets. Currently, there are no agreements on who will be responsible for building a reference library, and whether it is possible to have one at regional level.

Although there are regional bodies for capacity development, and plans are ongoing for development partner alignment and harmonization, more support is required for the Association of Southeast Asian Nations pharmaceutical working group and for building subregional (GMS) consensus on reliance policy and sharing of information on SF medicines.

In SF reporting, each country now has a designated, trained contact person on reporting SF medical products. Reporting from the region to WHO has increased as a direct result, and is expected to continue. Myanmar has had additional training of inspectors and developed a national task force and

action plan for addressing SF antimalarial medicines and other medical products. Also in Myanmar, DFAT is planning to continue funding the IRIMS work.

The capacity development plans that were developed for each NRA have been incorporated into the work of the RRP, which is helping to coordinate the actions of funding agencies and technical partners working to strengthen regulatory systems. At the national level, seven countries now have specific malaria elimination plans in place. WHO and TGA, the regulatory body for therapeutic goods in Australia, continue to be involved in supporting these efforts, and \$20 million has been secured from DFAT to continue this work. The NRAs themselves have also taken up the task of regulatory system strengthening, and some have their own funding to commit to this task.

INFORMATION SYSTEMS

Increased use of quality data, information tools and technologies to improve malaria and other communicable disease information systems




R-CDTA 8763:
Results for Malaria Elimination and Control of Communicable Diseases Threats in Asia and the Pacific (RECAP) Output 3

R-CDTA 8656:
Malaria and Dengue Risk Mapping and Response Planning in GMS in Cambodia, Myanmar and Thailand

OUTCOME 4: Increased use of quality data, information tools and technologies

KEY OUTCOMES



Increased use of quality data, information tools and technologies to improve malaria and other communicable disease information systems

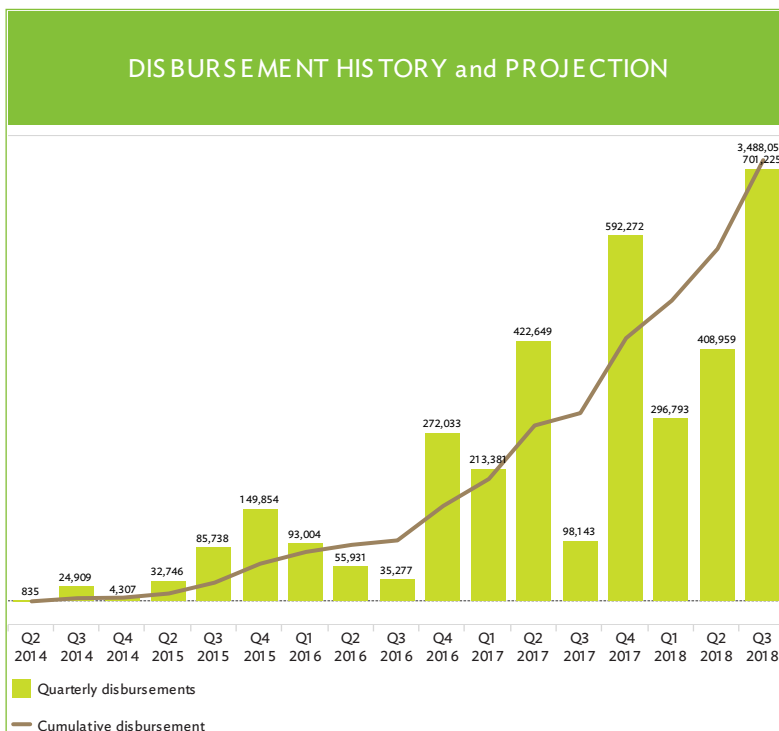
TRUST FUND ALLOCATION

Total allocation in million US\$	3.49*	Share in RMTF	12%
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* Increased from 2.93

eHEALTH SOLUTIONS TESTED IN GMS COUNTRIES

	Cambodia	Myanmar	Viet Nam
Unique Health IDs	●	●	●
GIS platform	●	●	●
Common geo-registry	●	●	
Disease surveillance system (eCDS v2)			●
HL7 and Fast Healthcare Interoperability Resources (FHIR)			●



Rationale

A strong information and communication technology (ICT) backbone is crucial for countries to transition from malaria control surveillance to elimination. Strengthening health information systems through better use of ICT can help countries to unlock the data they already collect, and use it more effectively for eliminating malaria and controlling communicable diseases. In countries with numerous

disparate disease and patient-level systems and a complex ecosystem, tackling health information exchange, interoperability, and standardization directly improves the access to communicable disease data, both at the aggregate and patient levels. Interoperability efforts aimed at reducing the burden of health workers and providing seamless integration and transparency of information are needed to ensure use of the system.

Table 6: Results of Outcome 4

Outcome Indicator	2014	Status in		Target	Progress	Output Indicator	2014	Status in		Target	Progress
	Baseline	2016	Q1 2018				Baseline	2016	Q1 2018		
1. Number of ICT solutions in use in malaria and other communicable disease information systems to improve and harmonize information management in GMS countries	0	0	3**	2	●	1. Surveillance mechanisms for malaria and communicable diseases mapped for GMS countries	No	Yes	Yes	Yes	●
						2. Recommendations on two ICT solutions to be used in the region	No	Yes	Yes	Yes	●
						3. Number of ICT solutions tested in GMS countries	0	0	5*	2	●
2. Number of countries utilizing harmonized geo-enabled malaria and dengue information systems	0	0	3	3	●	1. Number of countries with prevalence and incidence data for malaria and dengue analyzed	0	1	3	3	●
						2. Number of countries with developed capacity of government public health experts for application of GIS-based visualization	0	1	3	3	●
						3. Number of countries with GIS-based visualization system of malaria and dengue incidence and risk established and methodology evaluated	0	0	3	3	●
						4. Number of countries with policy recommendations for targeting mobile populations in malaria and dengue surveillance and control programs communicated to Ministries of Health***	0	0	0	3	●

Progress: ● Achieved at least 95% of target ● Continued until Q4 2018 through additional funding for the work

GMS = Greater Mekong Subregion, GIS = geographic information system, ICT = information and communication technology.

* Unique Health ID in Cambodia; GIS platform in Cambodia, Myanmar, and Viet Nam; common geo-registry in Cambodia and Myanmar; Disease surveillance system (eCDS v2) in Viet Nam; HL7 and Fast Healthcare Interoperability Resources (FHIR) in Viet Nam.

**GIS platform, common geo-registry and eCDS v2.

***Policy recommendations are being developed currently and will be finalized as population movement results are shared and discussed with ministry of health (MOH) staff. Additional funding support has been secured by MORU to complete this work.

Source: Authors.

Landscape Analysis

An RMTF-funded analysis of the landscape of health management information systems and malaria information systems in GMS countries found that most tools are used to manage malaria programs separately, without a common backbone or standards. A key finding was that support was needed so that a standards-based information system to benefit malaria and other communicable disease information system management could be built. To eliminate malaria, foundational components of surveillance are unique patient identification, the ability to track cases over the treatment course, and access to continuous timely surveillance data for both subnational and national stakeholders.

The analysis recommended several interventions, which informed subsequent projects under this outcome: implementation of good data management practices and digital health governance structure, agreement on digital health information standards and technical interoperability solutions, geo-enabling of the health information system, and implementation of unique health identifiers to link vertical disease information systems.⁶ The analysis showed that the gaps were not only technological, but also include the governance and enterprise architecture needed for the tools of ICT to be useful. Human resources for health information systems (HIS) were another key area for development under the project.

Malaria Surveillance

A low-cost software solution for hospital-based reporting of dengue cases in Myanmar was developed by MORU for piloting by the Myanmar Ministry of Health and Sports. MORU also trained local healthcare workers in high malaria risk areas in Cambodia and northeast Thailand to collect GPS data for village-level malaria risk mapping, a key step to local targeting of elimination activities. This uses a low-cost, high precision method developed by

MORU and the Asia eHealth Information Network (AeHIN) geographic information systems (GIS) Lab/Health GeoLab Collaborative with support from ADB. MORU mapped malaria and dengue surveillance data in Cambodia, Myanmar, and Thailand.

The project used data analytics based on call records, climate data, and travel surveys, to better understand the patterns of malaria infection and other communicable diseases (such as dengue) with regard to internal and cross-border migration. A consortium of research groups together with MORU analyzed mobile phone call records in Thailand to model the impact of population movement patterns on malaria and dengue distribution, and also analyzed travel survey data from patients with malaria in Cambodia, the Lao PDR, Myanmar, Thailand, and Viet Nam.

In Myanmar, data management systems for malaria surveillance were strengthened, including the use of mobile data management system (mDMS) for case reporting, and analytical tools for decision-making (see Outcome 5, pp.27).⁷ The project worked with grassroots volunteer malaria workers to improve routine, real-time case reporting through a mobile data management system piloted in the three townships. The mDMS, a smartphone-based app, was developed by Save the Children with the National Malaria Control Programme (NMCP), but RMTF funding enabled widespread piloting of the app for volunteer malaria workers and the initial results helped improve the app to make it more efficient and more user-friendly.

Geospatial Technology

The geographic dimension of malaria is key to enhancing disease surveillance and elimination through improved situational intelligence.⁸ In turn, ICT is key to geo-enabling a country HIS through geospatial technologies including GIS and the availability of a common registry of the geographic

⁶ *Digital Health Infrastructure: The Backbone of Surveillance for Malaria Elimination* - <https://www.adb.org/sites/default/files/publication/210856/digital>.

⁷ Funded under Outcome 5.

⁸ ADB. 2016. *The Geography of Universal Health Coverage*. ADB Briefs No. 55. April. Manila.

objects core to public health (e.g., health facilities, administrative and reporting divisions, villages). RMTF funding supplied computer hardware and GIS software to Cambodia, Myanmar, Thailand, and Viet Nam, and also ran spatial data management and GIS training for national disease control program staff from the same countries, with the addition of Bangladesh and the Lao PDR.⁹ This initiative has now grown into the Health GeoLab Collaborative to bring more partners into the effort to geo-enable health systems in Asia and the Pacific and develop common geo-registries. RMTF funding also supported Cambodia, Myanmar, and Thailand to map and analyze national surveillance data for malaria and dengue.¹⁰

In Viet Nam, geospatial technology was applied to map the availability of malaria services in public health facilities and the readiness of these facilities to provide these services. This was done in nine districts with high malaria transmission rates. Results highlighted resource gaps in facilities to provide preventive, diagnostics, and treatment services. The same technology and assessment methodology have also been further applied by the malaria program.

Policy and Strategy

As governance was identified as a key gap in the malaria information systems landscape analysis, ADB developed a health ICT governance architecture framework (HIGAF), required for successful implementation and sustainability of digital health solutions. After consultation and close collaboration with health sector ICT experts in the region, the framework was further refined, leading to the creation of HIGAF 2.0, designed specifically to meet the evolving needs of DMCs in the region.¹¹

Key to continuity of care is the ability to track malaria-infected subjects wherever they connect with service delivery through a unique health identifier, and the RMTF supported the development of a tool for unique patient ID assessment, which was then applied in Cambodia, the Lao PDR, Myanmar, and Viet Nam.¹² At the same time, policy recommendations from a brief on unique patient health IDs informed Cambodia's strategy on national patient ID management, and the respective implementation plan. Mapping the country's existing setup brought together different stakeholders at country level to decide on the country's digital health vision and mission and develop potential next steps.

Investment Guidance

A working paper, *Guidance for Investing in Digital Health*, was published in May 2018, together with an accompanying website.^{13,14} The outcome of this work will inform decisions on developing digital health investments. This includes the strengthening of health systems as a whole, as well as the solutions required to address specific health challenges, such as malaria. The guidance demonstrates that investing simply in digitalizing the malaria surveillance and care system is not a value-for-money investment, and that there must first be a digital health foundation in place. Moreover, only a phased and well-planned investment in digital health can add significant value to malaria surveillance and at the same time remain sustainable. This is especially important to consider for development partners who tend to support the digitalization of vertical disease programs. The practicalities of delivering these outcomes while providing socioeconomic benefits have been addressed by developing an accompanying Digital

⁹ ADB. 2018. Building Capacity for Geo-Enabling Health Information Systems: Supporting Equitable Health Services and Well-Being for All. ADB Briefs No. 88. February. Manila.

¹⁰ <https://healthgeolab.net/>.

¹¹ *Transforming Health Systems Through Good Digital Health Governance*. <https://www.adb.org/sites/default/files/publication/401976/sdwp-051-transforming-health-systems.pdf>.

¹² ADB. 2018. *Unique Health Identifier Assessment Tool Kit*. Manila.

¹³ ADB. 2018. *Guidance for Investing in Digital Health*. Manila. <https://www.adb.org/sites/default/files/publication/424311/sdwp-052-guidance-investing-digital-health.pdf>.

¹⁴ *Digital Health: Strategy and investment*. <https://sites.google.com/view/digitalhealthasia/home>.

Health Impact Framework (DHIF).¹⁵ The DHIF helps DMCs to understand how to invest in digital health for vertical disease programs while taking a health sector enterprise approach. Developed from over 60 digital health case studies from many countries, the framework helps decision makers make better informed decisions about planned socioeconomic and financial impacts. It can be applied to several projects simultaneously so decision makers can find an optimal fit of projects.

Viet Nam

Viet Nam was a focus country under the RMTF information systems component, and the projects there illustrate the importance of digital health improvements to support malaria elimination and communicable disease control. There were a number of interrelated RMTF-funded initiatives in digital health to improve the country's generation and use of health data for malaria elimination. These initiatives helped the government establish a health ICT policy and develop an action plan to standardize national systems. The RMTF was also used to fund engagement for buy-in and training of health workers in the new policy and enhanced disease surveillance systems that are case-based and include malaria and other communicable diseases.

With support under the RMTF, Viet Nam has adopted a digital health governance framework and decided to use the health-care standard HL7 FHIR as a practical solution to health data exchange and information systems interoperability. HL7 FHIR is a draft standard describing data formats and elements and an application programming interface for exchanging electronic health records especially in complex information systems so that patient data can be shared at all levels. Such data sharing is essential for countries to test, track, and treat and all malaria cases.

Before the involvement of the RMTF, in 2014 Viet Nam's Ministry of Health (MOH), the US Center for Disease Control and Prevention, and

private sector international partners had already begun collaborating to build a data warehouse using the electronic health disease surveillance system (eCDS). The government recognized that an enhanced eCDS system could reduce the time needed to generate disease surveillance reports, improve access to data on vaccine coverage rates, enhance early outbreak detection on a case-level basis, and allow for real-time malaria surveillance.

One important goal was to implement digital health solutions to ensure timely reporting for all notifiable diseases, including malaria, as mandated by Viet Nam's health policy. To bring all this work together, in February 2017, the MOH and the ADB met to identify a strategy and develop a workplan of activities and action for collaboration between the country's health agencies. Further strengthening of disease surveillance at local health facility levels, including for malaria, was identified as a priority with system interoperability and provincial training as a next step.

Enabling Factors

For most of the ICT projects under the RMTF, once local champions were identified, either within government or in partner organizations with a strong local presence, projects gained traction. Countries also benefited from guidance in establishing or enhancing their vision for digital health in disease surveillance, and policy design, rather than implementation of small-scale technical pilots, which can lead to even more fragmentation, as seen in malaria programs. Making the most of ADB's convening power, the RMTF projects brought together partners in ways they had not collaborated before, including separate ministries and departments within the same country, as well as uniting development partners to work more collaboratively toward a common goal. Another key enabler was deployment of both short-term international consultant experts and day-to-day engagement with local consultants.

¹⁵ *Standards and Interoperability Lab for Asia*. <http://www.sil-asia.org/lab-assets/>

The Viet Nam project succeeded because ADB brought key government decision makers together to get the foundations in place—standards, governance, and enterprise architecture—before launching in with new information systems. ADB was able to rally stakeholders and capitalize on the country leadership’s commitment to malaria and communicable disease surveillance as a health priority. The introduction of geo-enabling tools for surveillance, health information standardization, interoperability for vertical disease programs, community level information systems such as the Digital Health Frame were wholeheartedly embraced by the MOH. The decision to work with countries on their health-related ICT needs for malaria elimination existed at the start of the RMTF, but the project took off in Viet Nam in the latter part due to its right timing and commitment by all key stakeholders.

Next Steps and Sustainability Pathway

ADB helped establish both the Health GeoLab Collaborative, a collective of both institutions and individuals involved in geospatial technologies for health. Funding from the Bill & Melinda Gates Foundation is supporting continued geo-enabling work in Viet Nam, MORU’s risk mapping work in five GMS countries, and digital solutions to develop tools to support malaria elimination in Cambodia, the Lao PDR, and Viet Nam. Analysis of call data records to determine the impact of human mobility on malaria and dengue is ongoing.

ADB loans are in the pipeline for Viet Nam with an ICT component funded with an ADF grant to support the rollout of electronic health records with automated reporting of communicable diseases and malaria cases into vertical disease reporting systems. The Clinton Health Access Initiative and the National Institute of Malariology, Parasitology and Entomology, and Viettel Telecom and the Health Information Systems Programme Viet Nam continue to collaborate on developing the country’s malaria management system aligned to new standard operating procedures and reporting forms for malaria case and foci reporting and investigation. Viet Nam is making its own investments in patient portals and cloud-based health information systems to support national information systems.

To further ensure the timely subnational patient-level disease information, ADB supported the local health report automation by providing technical resources specific to District Health Information System (DHIS 2) that provides standardized health reporting from the 12,000 local health communes. This countrywide grassroots system will be connected with the district hospitals and national data center and is crucial in the timely access to patient-level communicable disease reporting and generation of the national health statistics. To help ensure standardization and disease reporting interoperability, ADB supported provincial-level MOH training of trainers and the drafting of standard operating procedures for reporting, which will also contribute to the sustainability of this project’s achievements.

LABORATORY DIAGNOSTICS AND SURVEILLANCE

Improved capacity of laboratory diagnostics and surveillance systems for malaria and other communicable diseases, including cross-border coordination




G0448/G0449/G0450: CAM/LAO/VIE: Additional financing for Second Greater Mekong Subregion Communicable Diseases Control Project (CDC2)

RCDTA 8959: Malaria and Communicable Diseases Control in the GMS

OUTCOME 5: Improved capacity of laboratory diagnostics and surveillance system for malaria, including cross border coordination

KEY OUTCOMES



- Improved diagnostic and surveillance capacity for malaria
- Improved cross-border coordination for malaria

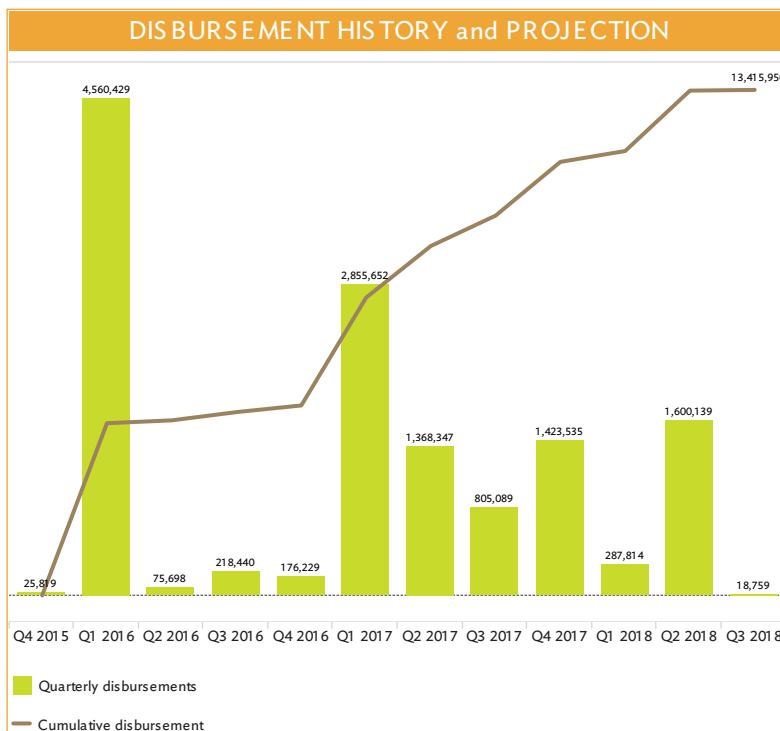
TRUST FUND ALLOCATION

Total allocation in million US\$ **14.37**

Share in RMTF **50%**

SUPPORT TO COUNTRIES

	Cambodia	Lao PDR	Myanmar	Viet Nam
Strengthening provincial malaria diagnostic and surveillance capacity	●	●	●	●
Strengthening cross-border coordination for malaria	●	●		●
Addressing malaria among mobile and migrant populations	●	●	●	



Rationale

Track, test, and treat is the mantra of malaria elimination, but this chain of events breaks down unless laboratory diagnostics and surveillance

systems are strong and well-functioning. The RMTF aimed to leverage ADB's existing projects in communicable disease control that improved diagnostics and surveillance in the GMS, including to remote places and hard-to-reach populations, and strengthened cross-border cooperation.

Table 7: Results of Outcome 5.1

Outcome 5.1 Increased diagnostic testing for malaria in project areas of Cambodia, Lao PDR, and Viet Nam													
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress		
		2016	2017					2016	2017				
1. Annual blood examination per 100 pop at risk for malaria in the project areas*						Diagnostic capacity for malaria							
	Cambodia Preah Vihear Province	11.2	6.7	8.4	10.0	●	1. Proportion of health facilities in project areas equipped with malaria diagnostic equipment	CAM	0	0	83	80	●
								LAO	0	100	100	70	●
								VIE**	78	78	100	100	●
	Lao PDR Champassack Province	12.7	7.9	9.2	10.0	●	2. Proportion of laboratory staff in target provinces trained in malaria diagnosis	CAM	0	0	100	100	●
								LAO	0	0	96	70	●
								VIE	0	100	100	100	●
	Attapeu Province	25.5	13.4	18.5	10.0	●							
	Saravane Province	14.2	8.3	8.4	10.0	●							
	Sekong Province	17.4	12.1	14.6	10.0	●							
Viet Nam Binh Phuoc Province	12.5	15.6	10.5	10.0	●								
Dak Nong Province	12.8	10.4	13.3	10.0	●								

Progress: ● Achieved at least 95% of target ● Substantial progress achieved

CAM = Cambodia, LAO = Lao People's Democratic Republic, VIE = Viet Nam.

* Data from the Ministry of Health

** Of the 182 commune health stations in the project areas, only 40 required new microscopes for malaria testing

Source: Authors.

Table 8: Results of Outcome 5.2

Outcome 5.2 Improved surveillance and response for malaria and other communicable diseases in project areas of Cambodia, Lao PDR, and Viet Nam including in cross-border areas													
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress		
		2016	2017					2016	2017				
1. Proportion of disease outbreaks (including malaria) in project areas reported within 24 hours						Surveillance capacity for malaria							
	Cambodia Preah Vihear	100	100	100	80	●	1. Proportion of health facilities and laboratories in project areas equipped with electronic reporting instruments for malaria surveillance	CAM	0	0	100	100	●
								LAO	0	0	100	50	●
								VIE**	100	100	100	100	●
	2. Proportion of health facilities in target provinces with staff trained in malaria surveillance with electronic reporting instrument						CAM	0	0	100	100	●	
							LAO	0	32	77	20	●	
							VIE	0	50	50*	80	●	

continued on next page

Table 8: continued

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress	
		2016	2017					2016	2017			
Lao PDR Champassack	100	100	100	80	●	Cross-border coordination and response for malaria						
Attapeu	50	100	100	80	●	3. Number of coordinated cross-border action plans developed based on GMS malaria elimination strategy in targeted border provinces	CAM	0	0	1	1	●
Saravane	100	80	100	80	●		LAO	0	2	2	2	●
Sekong	100	60	83	80	●		VIE***	0	-	-	3	
Viet Nam Binh Phuoc	100	100	100*	80	●	4. Number of village health workers at border provinces trained in malaria control and treatment	CAM	0	0	331	332	●
Dak Nong	100	100	100*	80	●		LAO	0	0	322	60	●
2. Proportion of border disease outbreaks (including malaria) in project areas reported across borders within 24 hours							VIE	0	236	236*	40	●
Cambodia Preah Vihear	NA	NA	NA	50								
Lao PDR Champassack	100	100	100	50	●							
Attapeu	50	100	100	50	●							
Saravane	100	80	100	50	●							
Sekong	100	60	83	50	●							
Viet Nam Binh Phuoc	100	100	100*	50	●							
Dak Nong	100	100	100*	50	●							

Progress: ● Achieved at least 95% of target ● Substantial progress achieved

CAM = Cambodia, LAO = Lao People's Democratic Republic, NA = no outbreaks of regional or international relevance, VIE = Viet Nam.

* As of Q1 2017

** Facilities already have the needed equipment

*** No specific cross-border action plans were developed by provinces but six cross-border activities were incorporated into the provincial annual operational plans that were all implemented

Source: Authors.

Table 9: Results of Outcome 5.3

Outcome 5.3 Increased diagnostic testing for malaria in project areas of Myanmar ^{a,b,c}											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. National malaria diagnostic quality assurance guidelines endorsed by the National Malaria Control Program						Diagnostic capacity for malaria					
						1. Proportion of health facilities in project areas equipped with malaria diagnostic equipment**	44	0	100	100	●
Mon State	No	No	Yes	Yes	●	2. Proportion of laboratory staff in target provinces trained in malaria diagnosis***	24	0	96	100	●
Sagaing Region	No	No	Yes	Yes	●	3. National malaria diagnostic quality assurance guidelines developed	No	No	Yes	Yes	●

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Table 9: continued

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
2. Annual blood examination per 100 pop at risk for malaria in the project areas											
Mon State (Project townships average) (Mawlamyaing, Belin, Paung, Kyaikhto)	4.2	-	13.5*	8.0****	●						
Sagaing Region (Project townships average) (Hkamti, Homalin, Paungbyin, Taze, Monywa, Pale)	3.1	-	24.1*	8.0****	●						

Progress: ● Achieved at least 95% of target

Q = quarter

* Data for 2017

** Total number of 43 health facilities

*** Total number of 83 staff

**** ABER target for 2020 in Myanmar, WHO-Malaria NSP 2016-30

Note: 2016 data was not collected because the project interventions started only in 2017.

^a This outcome indicator is used only for Myanmar. RCDDTA8959 supports the development of national guidelines on laboratory diagnostic and surveillance and is consistent with the Monitoring and Result Framework of the ADB Technical Assistance Document for RCDDTA8959 developed with concurrence from the Government of Myanmar. For Myanmar, the output indicator on cross border coordination is not included since the project has a limited scope on it while focusing on internal migrant and mobile populations. RCDDTA8959 also supports MMP-related activities in Cambodia and the Lao PDR.

^b Estimated total number of beneficiaries (1,984,915 under laboratory diagnostics; and 969,585 under surveillance).

^c RCDDTA8959 supports the Government of Myanmar in developing of a model to strengthen its laboratory diagnostic and surveillance system at local level in two project areas (Mon State and Sagaing Region), which is expected to roll out in the entire country, while simultaneously supporting the government capacity at the central level.

Source: Authors.

Table 10: Results of Outcome 5.4

Outcome 5.4 Improved surveillance and response for malaria and other communicable diseases in project areas of Myanmar											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. National malaria surveillance guidelines endorsed by the National Malaria Control Program						1. Proportion of health staff in project areas equipped with electronic reporting instruments for malaria surveillance*	0	0	97	100	●
Mon State	No	No	Yes	Yes	●	2. Proportion of health staff in target provinces trained in malaria surveillance with electronic reporting instrument*	0	0	97	100	●
Sagaing Region	No	No	Yes	Yes	●	3. National malaria surveillance guidelines developed	No	No	Yes	Yes	●
2. Proportion of disease outbreaks (including malaria) reported within 24 hours											
Mon State	NA	NA	**	80	●						
Sagaing Region	NA	NA	**	80	●						

Progress: ● Achieved at least 95% of target

NA = NA – no outbreaks of regional or international relevance, Q = quarter.

* Total number of health staff and village health volunteers

** All malaria cases were reported real-time within 24 hours by mDMS (mobile database malaria surveillance)

NA – no outbreaks of regional or international relevance

Source: Authors.

Communicable Disease Control 2– Additional Financing

The additional financing for malaria-related activities directed efforts toward controlling and eliminating malaria elimination through regional and country structures and processes already established under the ADB Communicable Disease Project 2 (CDC2). By allocating investments to the continuation of an existing ADB project, the RMTF was able to take previous gains, elevate them, and include malaria-specific interventions. Malaria activities funded under the RMTF complemented and augmented the national malaria programs in Cambodia, the Lao PDR, and Viet Nam and were synchronized with donor partners' ongoing involvements in malaria and in addressing the spread of artemisinin resistance in the region.

In all three countries, the project's activities strengthened and sustained vector control, promoted behavioral change, and strengthened malaria diagnosis, treatment, and surveillance capabilities. Through this project the RMTF was able to work at the grassroots level in cross-border areas, an otherwise extremely challenging environment in which to make an impact. The project brought about cooperation between the national malaria program and the communicable disease control (CDC) program at the central, provincial, and district levels. The two programs selected intervention sites together and jointly defined their priorities and resources needs for those sites.

In the areas identified for coverage by the RMTF project, support included provision of computer hardware, microscopes and other lab equipment; diagnostic supplies; and updating of lab standard operating procedures (SOPs) and quality assurance manuals and guidelines. The national malaria programs noted improvement in the quality of clinical diagnostic and case management through training conducted on malaria case management and treatment, surveillance for provincial and district health staff, and village health workers. Cross-border activities included disease information exchange, which included malaria and joint outbreak response simulation exercises.

Laboratory Quality Assurance and Malaria Surveillance in Myanmar

The RMTF-funded TA8959 project developed manuals, SOPs, and algorithms for malaria laboratory quality assurance for Myanmar. By bringing together the National Health Laboratory (NHL) and the NMCP, the project changed the way the two agencies worked together, which in turn also helped the NHL work with other disease agencies.

Data management systems for malaria surveillance in the project areas was strengthened, including the use of mobile data management system (mDMS) for case reporting, and analytical tools for decision-making. It worked with grassroots volunteer malaria workers to improve routine, and real-time case reporting through a mobile data management system piloted in the three townships. The mDMS, a smartphone-based app, was developed by Save the Children with the NMCP, but RMTF funding enabled widespread piloting of the app for volunteer malaria workers and the initial results helped improve the app to make it more efficient and more user-friendly. The NMCP and other development partners are reviewing the mDMS together with another mobile app developed by WHO for facility-based health workers.

Migrant and Mobile Populations

In Cambodia, the Lao PDR, and Myanmar, the RMTF extended the reach of the health system by training and equipping village health volunteers and migrant workers for malaria diagnosis and treatment, and mobile traders as volunteer peer educators to conduct health education and prevention. These volunteers formed the first line of defense against communicable diseases. The International Organization for Migration (IOM) worked with the national malaria programs in the three countries to develop innovative approaches to address malaria needs of migrant and mobile populations in work settings such as gold and jade mines, rubber plantations, and dam construction sites.

One of the key successes of the project is the engagement of the private sector by tapping and mobilizing camp site and construction managers as malaria volunteers. The managers were granted permission by the corporation heads to implement malaria control and prevention programs in their respective worksites. A final review mission in March 2018 found that mobile traders from the Lao PDR and Viet Nam, who ply around the district and who were trained as malaria peer educators, were found to effectively reach mobile and migrant populations (MMPs) with systematic malaria monitoring and have good coordination with the village volunteers.

Enabling Factors

Overall, building on existing project management units and the regional cooperation mechanisms established under the CDC2 project in Cambodia, the Lao PDR, and Viet Nam accelerated the achievements of the CDC2 AF in the provinces and districts and institutionalized malaria-specific SOPs.

In Myanmar, bringing together two different actors—the national health laboratories and the national malaria control program—under a common framework was transformational. With common SOPs and manuals on laboratory quality assurance, they were able for the first time to synchronize their reporting. Recruiting the right partners was also key: University Research Co. LLC (URC), and the IOM were chosen for their existing strong and deep presence in Myanmar and the Lao PDR. They brought with them an understanding of the local landscape, and existing relationships that could not be quickly achieved by a new player, smoothing the way for a good consultation process with country counterparts.

Next Steps and Sustainability Pathway

Case Detection and Laboratory Testing

In the Lao PDR, the reduction in malaria incidence can also be attributed to government efforts,

including discouraging illegal logging and people going into forests, and increased army patrols. Malaria cases may start to rise if these efforts are not sustained, through cooperation with the private sector and the military.

There is need to sustain and expand ICT infrastructure for better case reporting, as well as staff competencies on facility management, infection control, disease management through more health-care worker training. There is also a need to strengthen subnational financial management, so that funds reach the districts where they are required, to properly implement the 1–3–7 malaria elimination strategy.¹⁶

In Cambodia, as for the other GMS countries, mechanisms for microscopy skills retention and laboratory quality assurance should be in place, as fewer malaria cases will be seen during the elimination phase. While laboratory staff in Cambodia, for example, have stated a preference to use rapid diagnostic tests rather than microscopy, since this is easier, health-care workers should actually perform microscopy for malaria diagnosis. This is in line with the country's malaria elimination strategy, which states that each case must be confirmed by microscopy before treatment can be provided, as recommended by WHO. The technical support under CDC2-AF was able to provide microscopes, training on microscopy, and updated guidelines. The microscopes provided can digitally capture and share digital image of the blood smears. This cuts down diagnosis time and should facilitate timely treatment.

The country's medicine stocking and redistribution policy and processes should be adjusted. Cambodia experienced stockouts of malaria testing kits and medicines in 2018. The malaria program claims that this was due to the unexpected increase in the malaria cases, and there were difficulties restocking. Extra supplies from other provinces could not be directly channeled to the facilities where they were needed, as these commodities had to be first be channeled back to the central level.

¹⁶ The 1–3–7 malaria elimination strategy entails reporting of malaria cases within 1 day, confirmation and investigation within 3 days, and response to prevent further transmission within 7 days.

Malaria *P. vivax* cases are increasing and this requires glucose-6-phosphate dehydrogenase (G6PD) testing and close supervision during treatment, patient counseling and access to blood transfusion services for G6PD-deficient individuals. This will require health facilities and service providers in malaria endemic areas to have the right laboratory equipment and commodities, training, and mechanisms for medical supervision of G6PD-deficient cases.

Cross-Border Information Exchange

Cambodia, the Lao PDR, and Viet Nam have started to exchange data on an agreed list of communicable diseases of public health significance. However, the frequency and timeliness of information exchange can still be improved, and data standards, such as for case definition, need to be aligned.

Migrant and Mobile Populations

In discussions with the members of the Cambodia malaria program, it is clear that MMPs are still one of the main sources of malaria transmission and drug resistance. It also appears that the government does not have the capacity to address MMP issues, which include a general lack of access to health services, especially for foreign MMPs and undocumented workers. Some tend to self-medicate and travel to home countries to access health services. The issue of malaria elimination among MMPs must be integrated into the national health strategy, and addressing the issue of how to reach MMPs will also require stronger collaboration with the private sector.

Another challenge is sustaining the motivation, skills, and work of malaria health volunteers and peer educators as malaria incidence goes down and when Global Fund grant support for GMS countries ends and financing switches to their governments instead. In Cambodia, the government cannot pay for activities that are conducted beyond 20 kilometers from the health facilities, and most MMPs are forest goers. The government therefore relies on NGOs, which also have flexible systems that allow them to pay for volunteer health workers people outside the public health system. Treatment compliance among MMPs is also challenging. The first dose of malaria treatment is usually administered at the health facility, but problems remain with ensuring completion of treatment doses.

In Myanmar, the project with URC started under the RMTF will continue through Defeat Malaria Activity funded by the United States Agency for International Development. The Global Fund is working on funding support for IOM-Myanmar to continue its work on malaria and migrant and mobile population in the RMTF project sites. Central and provincial health offices in Cambodia and the Lao PDR have committed to sustain mobilization of village volunteers, particularly training of mobile traders as outreach and peer educators. This model was piloted under CDC2-AF has been expanded to the other provinces using Global Fund grants.

PROMOTION AND PREVENTION

Increased capacity to apply health impact assessment to consider determinants of health and communicable diseases in infrastructure projects

6



R-CDTA 8763:

Results for Malaria Elimination and Control of Communicable Diseases Threats in Asia and the Pacific (RECAP)

Output 6 communicable diseases addressed in infrastructure projects

OUTCOME 6: Increased capacity to address communicable diseases in infrastructure projects

KEY OUTCOMES

Increased capacity to address communicable diseases in infrastructure projects

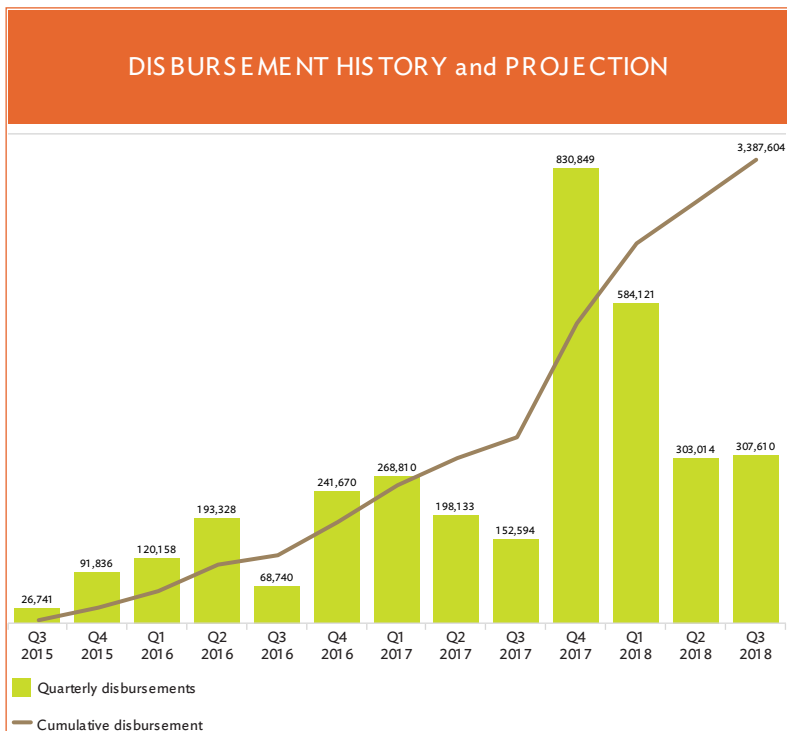
TRUST FUND ALLOCATION

Total allocation in million US\$	3.39*	Share in RMTF	12%
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* Increased from 2.96

HEALTH IMPACT ASSESSMENT DEMONSTRATION PROJECT

	Cambodia	Lao PDR	Myanmar	Thailand	Viet Nam
Energy		●			
Transport			●		
Urban development			●		
Water supply	●				
Water and sanitation					●
Special economic zones		●	●	●	



Rationale

Infrastructure projects have a health dimension that can be assessed, the impact ameliorated, and the benefits magnified to prevent malaria and other communicable diseases, and promote healthy development. The current public health challenges that stem from the interface of development and environmental and social change include the impacts of developing economic corridors and special economic zones (SEZs), issues of air quality, water and food security, and growing mobility. Antimicrobial resistance and poor coverage of informal often mobile and migrant population groups working in infrastructure development projects also justify the need for HIA.

Malaria Prevention in Infrastructure Development

The promotion and prevention component of the RMTF promoted HIA as a means to mitigate vector-borne diseases risks in large-scale infrastructure projects and improve community health outcomes. Large infrastructure projects attract mobile and migrant populations—those most at risk of malaria. The RMTF created an opportunity to advance HIA, particularly in the GMS, as a good practice to ensure project designs can safeguard and promote human health. The promotion of HIA was timely given the current public health challenges that stem from the interface of development and environmental and social change.

In the GMS countries, HIA policies and practice and efforts to include HIA as a formal part of infrastructure development planning and investment practice have been at different stages of development. Under the RMTF, HIA was promoted as an intersectoral approach to protecting and promoting community health and safety. Capacity for HIA practice expanded in the GMS in the past 2 years with RMTF support. The project became a catalyst for renewed interest for HIA as a development planning tool drawing attention to health risks and health co-benefits and facilitating healthy design and management of infrastructure projects.

An interrelated package of support was provided, to GMS countries and at regional level, for capacity development. To demonstrate HIA good practice, case studies were conducted in various sectors, i.e., energy, SEZs and border development, transport, urban development, and water and sanitation. These case studies, considering both community and occupational health and safety, offered recommendations to manage risks and benefits as part of the project planning, design and implementation.

Case Study in Urban Development Project

An HIA was developed for Mandalay Urban Services Improvement Project 1, which included a Public Health Management Plan (PHMP) with health indicators for monitoring of community health impacts. Stakeholder consultations promoted collaboration between project stakeholders and public health authorities for the implementation of the PHMP and discussion of institutional arrangements for the monitoring and management of vector-related diseases such as malaria and their environmental determinants. The meetings also enabled discussions on strengthening the capacity of local public health and environmental conservation teams to support public awareness and education campaigns. Project stakeholders, including government local health and environment staff, were trained on HIA.

Case Studies in Special Economic Zones and Border Development

HIAs were initiated in three SEZs—Savannakhet (Savan-SENO), the Lao PDR; Mukdahan, Thailand; Thilawa, Myanmar and in a border economic zone—Yunnan Lincang Border Economic Cooperation Zone Development, People's Republic of China (PRC). In the PRC, HIA involved rapid scoping and an analysis of health risks such as vector-borne diseases and impacts and recommendations for mitigation. The recommendations, developed in partnership with local health officials, were required to protect both workers and community members, include malaria services and supplemental to the

Table 11: Results of Outcome 6.1

Outcome 6.1 Increased capacity to apply health impact assessment (HIA) in infrastructure projects at country level											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. Number of countries that started to apply HIA in infrastructure projects (LAO, THA)	0	0	2	2	●	Situational analysis and needs assessment					
						1. Number of HIA country profiles (CAM, LAO, MYA, THA, VIE)	0	0	5	5	●
2. Number of infrastructure projects that applied HIA (Savannakhet, Mukdahan, Hongsa)	0	0	3	3	●	Country HIA guidelines					
						2. Number of countries with country HIA guidelines developed	0	0	3	3	●
						3. Regional HIA framework for special economic zones developed	0	0	1	1	●
						Capacity development					
						4. HIA training modules developed	No	No	Yes	Yes	●
						5. Number of countries with staff trained in HIA	0	0	4	4	●
						6. HIA curriculum developed for graduate public health and environmental programs	No	No	Yes	Yes	●
						7. Number of countries that integrated HIA curriculum into graduate public health and environmental programs	0	0	4	4	●
						8. Number of countries that started to offer HIA in graduate public health and environmental programs	0	0	4	4	●
						9. Regional network of HIA experts and universities established	0	0	1	1	●
						Policy and governance					
						10. Number of countries with costed HIA proposal	0	0	5	5	●
						11. Number of countries with HIA policies in place or developed	0	0	3	3	●
12. Number of countries with intersectoral coordination on HIA	0	0	3	3	●						
13. Number of HIA policy briefs developed	0	0	2	2	●						

Progress: ● Achieved at least 95% of target

CAM = Cambodia, HIA = health impact assessment, Lao PDR = Lao People's Democratic Republic, MYA = Myanmar, THA = Thailand, VIE = Viet Nam.

Source: Authors.

Table 12: Results of Outcome 6.2

Outcome 6.2 Increased capacity to apply HIA at ADB											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. Number of ADB-supported infrastructure projects in malaria-endemic areas that applied HIA* (CAM, MYA, VIE)	0	0	4	4	●	1. ADB HIA tools developed (sourcebook and checklists)	No	Yes	Yes	Yes	●
						2. ADB HIA training modules developed	No	Yes	Yes	Yes	●
						3. Number of ADB staff trained in HIA	0	30	30	30	●
						4. ADB HIA tools integrated into ADB processes	No	No	Yes	Yes	●

Progress: ● Achieved at least 95% of target *Desktop review

ADB = Asian Development Bank, CAM = Cambodia, HIA = health impact assessment, MYA = Myanmar, VIE = Viet Nam.

Source: Authors.

existing environment impact assessment and management plan.

HIA in the three SEZs enabled the development of an HIA framework for SEZs in the GMS, which can serve as a management tool for the continued development of healthy economic zones in the subregion.¹⁷ Country-specific guidelines were also produced for the Lao PDR, Myanmar, and Thailand reflecting their local context and specific requirements. Cross-border cooperation has also been promoted, with the Lao PDR and Thailand bilateral cooperation agreement for joint health surveillance and reporting, particularly in the affected border areas between Savannakhet and Mukdahan SEZs.

Curriculum Development and Training

To increase HIA capacity in the region key government agencies and universities should cooperate to improve the skills and knowledge of those currently involved in HIA, and build a new generation of HIA experts. In partnership with the WHO Collaborating Center for Impact Assessment at Curtin University (WHO CC-Curtin University) three curricula were developed—a standalone HIA course; HIA in environmental impact assessment;

and HIA in planning, environment, or health courses. Using adapted curricula, certificate courses were subsequently offered by six GMS universities and parallel training workshops were led by health ministries. Over 600 HIA practitioners from key government agencies and staff from the private sector have been trained on basic principles and practice of HIA, application of tools, exploring decision-making criteria and options for institutional arrangements between the health and environment sectors to support a coordinated approach to HIA. Within ADB, ADB staff have been trained on HIA as part of staff development training program, using the bank's own funding.

Regulation and Guidelines

To ensure infrastructure projects do not inadvertently increase the risk of malaria and undermine efforts to eliminate the disease, national legislation for HIA implementation is essential. In the GMS, both the Lao PDR and Thailand have an HIA policy as part of their healthy public policy since 2006 and 2000, respectively. Technical assistance through RMTF made possible a review of HIA policy and implementation and the development of sector-specific guidelines for these countries. In Cambodia, Myanmar, and

¹⁷ ADB. 2018. *A Health Impact Assessment Framework for Special Economic Zones in the Greater Mekong Subregion*. Manila.

Viet Nam, the RMTF has enabled discussion between ministries of health and ministries of environment on the integration of health into the well-functioning environment impact assessment processes. Moreover, HIA guidelines have been prepared for these countries for further intergovernmental review led by each country's ministry of health. Country and sector-specific guidelines allow for more explicit community health and workers' health and safety components in infrastructure development, which can be used as part of the malaria elimination effort in these countries.

Within ADB, an HIA sourcebook has been developed, providing clear procedures to ensure commitment for community and occupational health and safety are met in the development and implementation of projects. Following this new guideline, advocacy for HIA in large projects continues, including consultation with safeguards staff on stronger monitoring of health impacts from projects to mitigate risks of malaria. Further, an addendum on health has been proposed for inclusion in the ADB Handbook on Poverty and Social Analysis. This could support the assessment of community health attributes of a project.

Enabling Factors

At the country level, the key to success of every project was the presence of a local champion within the country counterpart agencies, and also engagement of local consultants who could carry the work of the international consultants forward in the local language. Keeping HIA highly visible within ADB over a protracted period of time paid off, both in terms of creating demand for HIA training, and for advocacy for resources to continue the work started under the RMTF. The project came at a time when a tipping point could be reached within ADB, and the bank has become the only multilateral financing institutions with so much experience in

HIA to share with development partners. Engaging with the WHO CC-Curtin University on HIA to develop curricula and then disseminating them through local universities was a very successful strategy to mainstream HIA and make local training in it sustainable.

Next Steps and Sustainability Pathway

Countries still have unexploited opportunities to formally adopt national HIA guidelines and other HIA tools, particularly in the provinces. Within the health sector, institutional arrangements must govern HIA with clear and functional links to other MOH departments and health programs. There is a need to further strengthen intersectoral cooperation to apply HIAs and implement PHMP to mitigate risks of malaria and other communicable disease threats as it relates to development projects. This requires clear institutional arrangements between public health, environment, and planning authorities, including at provincial level.

Governments still need to agree on the nature of HIA, not only in terms of health risk assessment with a view to mitigation, but also in identification of health opportunities to promote health co-benefits from development projects., such as through provision of health services to MMPs who often work in large development projects, integrated border development projects or SEZs. To encourage and sustain improvements in the practice of HIA, a network was established jointly with the WHO CC-Curtin University. It is envisaged that the HIA Network Asia Pacific will facilitate collaboration between countries and HIA practitioners, including research and sharing of good practices.¹⁸ The GMS Health Cooperation Strategy and Action Plan for 2018–2022 will guide forward programming and mobilizing resources for health cooperation, and includes HIA as one of the strategic and operational priorities. This provides additional opportunities to expand HIA work in the GMS.

¹⁸ About the HIA Network Asia Pacific. <http://www.hianetworkasiapac.com/about/>

4. KNOWLEDGE PRODUCTS AND PUBLICATIONS

Regional Malaria and Other Communicable Disease Threats Trust Fund

ADB. 2015. *Malaria Elimination: An entry point for strengthening health systems and regional security, and a public health best buy*. Manila. <https://www.adb.org/sites/default/files/publication/178203/malaria-elimination.pdf>

Leadership

M. Counahan et al. 2018. Investing in Regional Health Security for Sustainable Development in Asia and the Pacific. *ADB Sustainable Development Working Paper Series* No. 56. Manila: Asian Development Bank. <https://www.adb.org/publications/regional-health-security-asia-pacific>

Medicines

S. Roth et al. 2018. Strong Regulation of Medical Products: Cornerstone of Public Health and Regional Health Security. *ADB Briefs*. No. 99. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/456866/adb-brief-099-strong-regulation-medical-products.pdf>

S. Roth et al. 2018. Portable Screening Devices for Medicines Quality: Putting Power into the Hands of Regulators in Low-Resource Settings. *ADB Briefs*. NO.101. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/461051/adb-brief-101-screening-devices-medicine-quality.pdf>

S. Roth et al. 2016. Strong Supply Chains Transform Public Health. *ADB Briefs*. No. 72. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/214036/strong-supply-chains.pdf>

S. Roth et al. 2016. Better Regulation of Medicines Means Stronger Regional Health Security. *ADB Briefs*. No. 54. *ADB Briefs* No. 54, Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/184392/better-regulation-medicine.pdf>

Information Technology

ADB. Forthcoming. Digital Health Convergence Meeting Toolkit.

P. Drurry et al. 2018. Guidance for Investing in Digital Health. *ADB Sustainable Development Working Paper Series*. No.52. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/424311/sdwp-052-guidance-investing-digital-health.pdf>

ADB. 2018. *Unique Health Identifier Assessment Tool Kit*. Manila <https://www.adb.org/documents/unique-health-identifier-assessment-toolkit>

A. Marclo et al. 2018. Transforming Health Systems Through Good Digital Health Governance. *ADB Sustainable Development Working Paper Series*. No.

51. Manila: Asian Development Bank. <https://www.adb.org/publications/transforming-health-systems-good-digital-health-governance>.

S. Ebener et al. 2018. Building Capacity for Geo-Enabling Health Information Systems: Supporting Equitable Health Services and Well-Being for All. *ADB Briefs*. No. 88. Manila: Asian Development Bank. <https://www.adb.org/publications/building-capacity-geo-enabling-health-information-systems>.

S. Mellor et al. 2016. Digital Health Infrastructure: The Backbone of Surveillance for Malaria Elimination. *ADB Briefs*. No. 69. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/210856/digital-health-infrastructure.pdf>.

M. Stahl et al. 2018. On the Road to Universal Health Coverage Every Person Matters. *ADB Briefs*. No. 56. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/183512/uhc-every-person-matters.pdf>

S. Roth et al. 2016. The Geography of Universal Health Coverage. *ADB Briefs*. No. 55. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/183422/geography-uhc.pdf>

S. Roth et al. 2015. Universal Health Coverage By Design. *ADB Briefs*. No. 36. Manila: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/160117/universal-health-coverage-design-ict.pdf>

Promotion and Prevention

ADB. 2018. *A Health Impact Assessment Framework for Special Economic Zones in the Greater Mekong Subregion*. Manila. <https://www.adb.org/publications/health-impact-assessment-framework-economic-zones-gms>.

ADB. 2016. *Greater Mekong Subregion Health Impact Assessment Project: Project Brief*. Manila. <https://www.adb.org/publications/gms-health-impact-assessment-project-brief>.

Others

ADB and World Health Organization. 2016. *Monitoring Universal Health Coverage in the Western Pacific. Framework, indicators and dashboard*. Manila. <https://www.adb.org/sites/default/files/publication/203926/uhc-western-pacific.pdf>.

5. GENDER DIMENSIONS

ADB's Strategy 2020 identifies gender equity as one of the five drivers of change that are emphasized in all of its operations. ADB's commitment to gender equality is integral to the management of the RMTF. ADB loans and grants meeting specific requirements include a gender action plan (GAP), with a clear monitoring and evaluation framework.

There are several specific gender issues related to malaria and other communicable diseases, which are considered under the RMTF implementation. Men are more at risk to contract malaria through occupational exposure during night time in rubber plantations, forests and mines, for example. On the other hand, women shoulder the main burden of taking care of sick family members, and pregnant women are more vulnerable to develop severe malaria. However, typically there is a lack of sex-disaggregated data in national malaria information systems. In terms of malaria project staffing, although there are more female than male village-level malaria workers, at the management level in national malaria programs, there are more men than women. In some settings, such as plantations deep in forested areas where it was difficult or dangerous for women to work, it was more appropriate to work with male volunteers rather than females.

Gender activities were integrated into the implementation of the main activities of the project, notably the additional financing to Second GMS Regional Communicable Diseases Control Project,







which specifically included gender action plans for each country to address some of the issues raised above.

Some key achievements for Cambodia, the Lao PDR, and Viet Nam are detailed in the following tables, according to three dimensions: (i) enhancement of opportunities for female staff in Center for Disease Control systems and improved gender analysis in regional CDC systems; (ii) improved responsiveness of CDC to gender/ethnic issues in targeted districts and/or province and increased participation and awareness of women in CDC prevention in project location; and (iii) enhanced gender-awareness and responsiveness of CDC project management.

Highlights include the fact that 100% of surveillance and response data in the Lao PDR is sex-disaggregated. In Viet Nam, data collected since 2016 is disaggregated and in Cambodia, malaria and other key communicable disease data has been sex-disaggregated. This data is widely used in project plans across the three countries. All three have also shown marked increased in hiring of new female staff, increasing the overall proportion of female staff from 44% in 2012 to 54% in 2016 Cambodia, and from 45% in 2014 to 61.7% in 2016 in the Lao PDR. Women are equally represented in the ranks of volunteer health workers (VHW) in the Lao PDR, account for 44% of VHWs trained since 2012 in Cambodia, and accounted for the majority trained in Viet Nam.

6. ANNEX

Annex A: RMTF Results-Based Framework

<p>IMPACT</p> <p>Reduced risk to the Asia and the Pacific region and globally from drug-resistant malaria and other communicable disease threats</p>											
<p>REGIONAL AND NATIONAL OUTCOME</p> <p>Increased national and regional capacity to implement strategies and ensure response</p>											
<p>KEY OUTCOMES THAT ADB STRATEGICALLY CONTRIBUTES TO:</p>											
	<p>OUTCOME 1 LEADERSHIP</p> <p>Strengthened leadership, decision-making and accountability for malaria elimination and addressing communicable disease threats</p>		<p>OUTCOME 2 FINANCING</p> <p>Increased financing for malaria elimination and addressing communicable disease threats</p>		<p>OUTCOME 3 MEDICINES</p> <p>Improved regulatory capacity to support increased availability and use of quality-assured health products for malaria and other communicable diseases</p>		<p>OUTCOME 4 INFORMATION SYSTEMS</p> <p>Increased use of quality data, information tools and technologies to improve malaria and other communicable disease information systems</p>		<p>OUTCOME 5 LABORATORY DIAGNOSTICS AND SURVEILLANCE</p> <p>Improved capacity of laboratory diagnostics and surveillance system for malaria and other communicable diseases, including cross-border coordination</p>		<p>OUTCOME 6 PROMOTION AND PREVENTION</p> <p>Increased capacity to apply health impact assessment to consider determinants of health and communicable diseases in infrastructure projects</p>
<p>Regional Capacity Development Technical Assistance (RCDTA) 8485 RCDTA 8681 RCDTA 8763</p>	<p>RCDTA 8763</p>	<p>RCDTA 8763</p>	<p>RCDTA 8763</p>	<p>RCDTA 8763 RCDTA 8656</p>	<p>RCDTA 8959 & CDC II-AF G448 CAM G449 LAO G450 VIE</p>	<p>RCDTA 8763</p>					

FOCUSING ON RESULTS PROGRESS TOWARD KEY OUTCOMES AND OUTPUTS

OUTCOME 1: LEADERSHIP

Strengthened leadership, decision-making, and accountability for eliminating malaria and addressing communicable disease threats

Outcome 1.1 Increased commitment and collaboration for malaria elimination and addressing communicable disease threats											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	2017					2016	2017		
1. Number of malaria-endemic countries that endorsed the malaria elimination road map	0	13	14*	21**	●	1. Malaria elimination road map developed	No	Yes	Yes	Yes	●
2. Number of donor countries that endorsed the malaria elimination road map	0	7	7***	7	●						

Progress: ● Achieved or on track

* Cambodia, India, Indonesia, Lao People's Democratic Republic Malaysia, Myanmar, Papua New Guinea, People's Republic of China, Philippines, Republic of Korea, Solomon Islands, Thailand, Vanuatu, Viet Nam

** APLMA's 2020 target

** Australia, Brunei Darussalam, Japan, New Zealand, Russian Federation, Singapore, United States

Story behind the numbers

- The Asia Pacific Leaders Malaria Alliance (APLMA) works to advocate for eliminating malaria and addressing threats from communicable diseases. It promotes regional coordination at the highest level. APLMA has successfully brokered leader-level East Asia Summit Statements on malaria elimination since 2014. In early 2017, fourteen heads of government reaffirmed their commitment and welcomed progress in the implementation of the proposed actions in the endorsed Asia Pacific Leaders' Malaria Elimination Road Map.

Outcome 1.2 Improved use of information for decision-making and accountability for malaria elimination and addressing communicable disease threats								
Outcome Indicator	2014 Baseline	Status in		Output Indicator	2014 Baseline	Status in		Progress
		2016	2017			2016	2017	
1. Malaria Elimination Dashboard used to inform high-level regional policy dialog on malaria elimination	No	No	Yes	Yes	No	Yes	Yes	●
				1. Malaria Elimination Dashboard prototype	0	22	22	●
				2. Number of countries with data compiled from the World Health Organization (WHO) for the technical annex of the Malaria Elimination Dashboard	0	4	22	●
				3. Number of countries with data compiled for Malaria Elimination Dashboard indicators	No	No	Yes	●
				4. Malaria Elimination Dashboard finalized	No	Yes	Yes	●
2. Investment cases and toolkit results used to inform high-level regional policy dialog on malaria financing	No	No	Yes	Yes	No	Yes	Yes	●
				1. Costing framework and tools developed*	0	2	2	●
				2. Number of countries/subregion with costing for malaria elimination* (BAN, IND, PNG, GMS)	0	0	4	●
				3. Number of country/subregional investment cases developed* (BAN, IND, PNG, GMS)	0	0	2	●
				4. Number of business cases for private sector investment in malaria control and elimination* (BAN/IND/PNG and GMS)	0	0	1	●
				5. Malaria program efficiency analysis tool (MPEAT)*	No	No	Yes	●
				6. Recommendations developed on financing options for the Asia and Pacific Region*				

Progress: ● Achieved at least 95% of target

BAN = Bangladesh, IND = India, GMS = Greater Mekong Subregion.

* Upon review of the logical flow of outputs and outcomes, these outputs that were previously tracked under Outcome 2 (Financing) are moved here as these better contribute toward improved use of information for decision-making and accountability for malaria elimination and addressing communicable disease

Story behind the numbers

Malaria elimination dashboard

- The APLMA Malaria Elimination Dashboard is a decision and accountability tool that provides visibility to national and regional progress toward malaria elimination targets, as well as fulfillment of priority actions and identification of areas requiring attention. Twenty malaria-endemic countries have agreed to use the dashboard and its associated technical annex to inform high-level regional policy dialog on malaria elimination. The dashboard data was gathered from the APLMA countries using a questionnaire, and the technical annex uses the latest data from the World Malaria Report 2017 published in November 2017. The APLMA Malaria Elimination Dashboard was presented and discussed as a tool to inform high-level regional policy dialog on malaria elimination during the APLMA Senior Official's Meeting in December 2017 and publication via the APLMA website is due by the end of 2018.

continued on next page

Box continued

Story behind the numbers

Investment cases and toolkit for financing malaria elimination

- To assess the economic rationale for malaria elimination, three national level investment cases in Bangladesh, Indonesia, and Papua New Guinea (PNG), as well as two regional investments cases in the Greater Mekong Subregion (GMS), and the whole Asia and Pacific region, were completed in June 2017. Each case estimates the cost and economic and financial returns of malaria elimination through 2030. National and regional policymakers can use this evidence to inform malaria program budgeting, strategic planning, and advocacy for domestic resource mobilization. They also aim to generate evidence around optimal ways to increase and expand the amount of sustainable financing in support of malaria elimination.
- Modeling and ingredient approaches were used to cost malaria elimination by 2030. A costing tool for the modeling approach and mathematical transmission models for projecting malaria burden across 22 countries in Asia and the Pacific have been completed. The costing tool using the ingredient approach was implemented in Bangladesh and Indonesia.
- The economic and social benefits of elimination were estimated through the Malaria Elimination Transmission and Costing in the Asia Pacific (METCAP), a transmission model created by the Mahidol-Oxford Tropical Medicine Research Unit (MORU), in collaboration with the MEI and the University of Cape Town. It is the first multi-species model to be exclusively developed for the Asia and Pacific region. It can project transmission reductions and predict elimination based on a number of scenarios. Four counterfactual scenarios were modeled, including one business-as-usual scenario and three reverse scenarios that simulated the potential impact of scaling down the malaria program. The six elimination scenarios were modeled sequentially to increase in complexity and in the number of interventions included. Across all 10 scenarios, three assumptions around the likelihood of artemisinin resistance were applied, the use of mass drug administration (MDA), and the scale up of LLINs to 80%. For each country, the minimum scenario that would achieve malaria elimination was determined, defined as 1 year with less than one reported clinical case. These additional scenarios produced a total of 80 scenarios (with and without resistance; with and without MDA; and with and without LLIN scale up to 80%). In addition, the effect of improved targeting of malaria interventions was simulated on costs by reducing intervention coverage by 30% among the PAR for all scenarios, with and without the resistance and MDA assumptions.
- The outputs of the METCAP have been transformed into an online interactive mobile application that generates graphs and charts showing changes in malaria morbidity and mortality and associated program costs under the different intervention scenarios. It is currently in Beta form, and can be accessed at: <http://www.metcapmodel.net>
- Building on the September 2014 forum “Opportunities for Corporate Sector Engagement in Malaria Control in Asia-Pacific” co-hosted by APLMA and the WHO in the Asia and Pacific region, the MEI generated four business cases on private sector engagement in malaria elimination one for the countries in the GMS and one for Bangladesh, Indonesia, and PNG. These business cases assess the motivators, enablers and incentives regarding private sector investment in malaria elimination and their participating in public-private partnerships. In the GMS, productivity is the most frequently stated motivator for companies to invest in health and the absence of skilled workers is seen as having a major impact on productivity. The most common enabler was the government (both local and national) providing clear instructions on where the private sector can contribute. In addition, relevant information on the challenges at hand would enable the private sector to identify solutions and resources needed. Respondents identified tax incentives and recognition awards as viable incentives to promote private sector involvement in malaria elimination.
- The MPEAT was developed by the MEI to help malaria program managers collect, organize, and track data points related to the technical efficiency of a malaria program. MPEAT enables users to compare specific epidemiological, financial, and operational indicators between two years and against performance targets set by the program. The MPEAT has been used in Bangladesh, Indonesia and PNG, Bangladesh, and Indonesia to identify areas that need strengthening, with the objective of maximizing value, reducing waste, and ultimately saving resources.
- Among the efficiency areas included is procurement of goods and services; targeting of services and interventions; choice of best value/highest impact strategies and vertical versus integrated programming; and collaboration with other programs and partners.
- The possibility of establishing a regional health fund for addressing the health security threat from infectious diseases was explored. Malaria is one of the several infectious diseases of concern in the Asia and Pacific region and political leaders and public health experts are aware of the threat to health security posed by both drug resistance and emerging disease threats. The current financial landscape for malaria and malaria elimination in the Asia and Pacific region was examined and opportunities for resource mobilization, including an innovative regional health fund, were discussed. This fund would potentially finance priority strategic regional activities, provide support to countries in the region with the highest malaria burden and least capacity to secure domestic funding, and scale up investments in national programs. A regional resource mobilization strategy was developed, which provides a summary of the current state of resources available for malaria elimination and recommends key opportunities to mobilize additional resources for national malaria elimination in the Asia and Pacific region. The report, based on a regional resource mobilization framework, provides an overview of demand for malaria elimination resources, current supply of resources, and recommends key opportunities to fill the resource gap. The resource mobilization framework and report include political capital and the political environment for policy reforms, including recommended fiscal reforms to increase health financing. It assumes that the demand for additional resources has been determined and that the underlying evidence and investment case for elimination has been developed. The strategy leverages on the findings of the investment cases, private sector business cases, and the Asia and Pacific region financing assessment, and aims for an increase in resources for elimination through to 2030. It outlines the processes and priority actions that need to be undertaken to mobilize and sustain the necessary resources to enable the region to achieve its goal of a malaria-free Asia and Pacific region by 2030.

continued on next page

Box continued

Story behind the numbers

- Dissemination meetings on the investment cases were conducted with malaria programs, local partners, and stakeholders in Bangladesh, Indonesia, and PNG. The high-level findings of the investment cases and recommendations from private sector business cases and MPEAT were discussed at the Senior Budget Officials meeting in Tokyo in May 2017. Products from this body of work were shared with attendees of the WHO Strategic Advisory Group in New Delhi in November 2017, and the MPEAT was featured in the Joint Senior Budget Officials Network for Fiscal Sustainability of Health Systems for Asia in December 2017. Joint Malaria Week from December 4-8 in Nay Pyi Taw, Myanmar highlighted this work, co-sponsored by APLMA and the Asia and Pacific Malaria Elimination Network (APMEN). Several sessions incorporated the findings, including: APMEN workshop on the MPEAT (4 December 2017), ADB Regional Malaria Trust Fund (5 December 2017), APLMA Senior Officials Meeting (6 December 2017), RAI DG's meeting (7 December 2017), and the Ministerial Meeting on Malaria Elimination-GMS and China (8 December 2017). The three national investment cases and two regional investment cases, the METCAP, private sector business cases, and the MPEAT are all available online at www.shrinkingthemalariamap.org and are being shared with key partners. A Q&A with Ben Rolfe (chief executive officer, APLMA), Susann Roth (senior development specialist, ADB), and Rima Shretta (associate director of economics and financing, UCSF MEI) was produced. This work has also been featured in the *New York Times* and *Nature*.

OUTCOME 2: FINANCING

Increased financing for malaria elimination and addressing communicable disease threats

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. Amount of ADB grants made available for malaria elimination and addressing communicable disease threats	\$22.0m	\$82.5m*	\$82.5m*	\$80.0m	●	1. ADF health security grants for group A and B countries mobilized (\$52.5m)	No	Yes	Yes	Yes	●
2. Amount of country loans for malaria elimination and addressing communicable disease threats	\$27.0m	\$144.0m*	\$144.0m*	\$120.0m	●	2. GMS health security funds approved (\$117m as loan and \$8m as grant) 3. ADB Health Bond launched (\$100m OCR)	No	Yes	Yes	Yes	●

Progress: ● Achieved at least 95% of target * Cumulative amount

ADB = Asian Development Bank, ADF = Asian Development Fund, GMS = Greater Mekong Subregion, m = million, OCR = ordinary capital resources.

Story behind the numbers

- Before the development of the RMTF, ADB had invested \$49 million in communicable disease control (\$22 million as grant for Cambodia and the Lao PDR, and \$27 million loan for Viet Nam). Using the RMTF funds, an additional grant of \$9.5 million was released in 2015 for Cambodia, the Lao PDR, and Viet Nam.
- The RMTF was catalytic in raising additional ADB funds to support efforts for malaria elimination and addressing communicable disease threats. A total of \$52.5 million has been mobilized for health security measures for all countries eligible for the Asian Development Fund (ADF) as per ADB's concessional assistance policy. An additional \$125 million worth of loans and grants for health security in GMS countries was also approved in November of 2016.
- While the target has been met for increased financing, ADB continues to support financing mechanisms for health, most notably through the issuance of ADB's first health bond. The bond was a private placement of \$100 million issued in March 2017 and will support lending to countries on targeted health financing, including malaria and communicable disease programs. ADB will continue to support the bond pipeline process for potential subsequent issues. The ADB health bond private placement is a first of its kind, both regionally and globally, ADB is assessing the potential for a further ADB health bond issuance in 2018, pending a suitable health project pipeline.
- ADB also developed a public-private partnerships (PPPs) investment brief for the health sector to promote increased support for health PPPs including those services that could benefit malaria elimination and communicable diseases. The health PPP brief included a detailed review of the broader health systems strengthening ecosystem required to support successful PPPs, including lessons from other sectors and programs on building successful PPP programs.
- In December 2017, ADB signed a memorandum of understanding (MOU) with the Global Fund (GF), the first of its kind between the GF and a development bank. The MOU is designed to (i) promote institutional coordination, (ii) develop a project pipeline targeting health systems development and strengthening for malaria, TB and HIV and AIDS elimination and control, and (iii) support governments' transitional finance. The MOU was developed in coordination with ADB's Office of Cofinancing Operations (OCO), the Health Sector Group, regional departments, and the GF regional teams. The MOU process allowed ADB and the GF to discuss detailed financing and collaboration modalities, including results and inputs-based grant financing, and blended financing modalities based on parallel and joint cofinancing. Since the MOU signing, the focus has been on identifying and assessing cofinancing opportunities. The innovative finance consultant has been working with ADB regional departments and the GF to facilitate project mapping and cofinancing—a project that encompasses malaria and other communicable diseases for Bhutan, PNG, and Sri Lanka, as well as the GMS countries. Preliminary discussions were also held to support the GF and Pacific Island nations discuss a procurement system to support national purchasing and price effectiveness.

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Story behind the numbers

- From January 2018 to June 2018 key partner workshop and collaboration meetings (not financed under the RMTF) were held in Geneva (OCO, GF March 2018), Singapore (ADB SDCC, OCO, regional departments, and GF counterparts and APLMA during April 2018), and Melbourne (World Malaria Congress, July 2018). During these meetings the following were achieved:
 - » Development of a detailed concept note highlighting collaboration frameworks, outlines of innovative financing pilots for five countries between GF and ADB, draft framework agreements, the “Regional Financing Facility” preliminary design pitch book, a draft monitoring and evaluation (M&E) framework, and detailed meeting, workshop and panel presentations and materials to support partner discussions;
 - » Go-ahead by partners (APLMA, GF to date, pending confirmation of involvement between three more partners) to facilitate detailed fund design including a concrete project pipeline of collaboration/cofinancing that supports health sector development including malaria and other communicable diseases;
 - » Socialization of the proposed regional financing facility to broader stakeholders including World Bank, WHO, academia, and bilateral;
 - » Formalizing a knowledge sharing network between ADB OCO, SDCC, APLMA and the Inter-American Development Bank on experiences with multidonor facilities to support malaria and other health innovative financing mechanisms; and
 - » Facilitating discussions between GF and partners, and ADB regional department staff to discuss integration of cofinancing or parallel financing on projects in Bangladesh, Bhutan, Sri Lanka, PNG, Solomon Islands and the Lao PDR.

OUTCOME 3: MEDICINES

Improved regulatory capacity to support increased availability and use of quality-assured health products for malaria and other communicable diseases

Outcome 3.1 Improved operational capacity of national regulatory agencies (NRAs)							
Outcome Indicator	2014 Baseline	Status in		2014 Baseline	Output Indicator	2014 Baseline	Progress
		2016	Q2 2018				
1. Number of countries with improved operational regulatory capacity	0	0	3*	0	1. Number of countries with NRA capacity profiles (CAM, LAO, MYA, THA, VIE)	0	●
				0	2. Number of countries with NRA capacity strengthening road maps (CAM, LAO, MYA, THA, VIE)	0	●
				No	3. Training modules developed	No	●
				0	4. Number of countries with NRA staff trained on priority regulatory issues and gaps	0	●

Progress: ● Achieved at least 95% of target

CAM = Cambodia, LAO = Lao People's Democratic Republic, MYA = Myanmar, THA = Thailand, VIE = Viet Nam.

* Cambodia, LAO and Myanmar built capacity based on the Centre of Regulatory Excellence (CoRE) needs assessment, which helped identify areas of focus and improve partner coordination. The trainings conducted for country representatives and the road map developed all encapsulate capacity building. Additionally, the targeted technical support and work in Myanmar had a direct impact on the operational capacity of its Food and Drug Administration and additional activities addressing targeted monitoring of the quality of medicines on the market, linking the quality control laboratory into the electronic information system and developing the basis of a national drug safety strategy and pharmacovigilance system.

Story behind the numbers

- With ADB support, the CoRE, a regional capacity building center and partner-coordinating platform for regulatory systems strengthening and convergence for Southeast Asian developing member countries, was established in collaboration with the Government of Singapore (which provided \$10 million in cofinancing), Duke-NUS, WHO, United States Pharmacopeia (USP) and other partners.
- Building on the WHO profiling tool, a more practical regulatory system profiling instrument (RSPI) to assess NRA capability, especially related to regulating anti-malarials and other communicable diseases medicine, has been developed and capacity gap analysis has been conducted by CoRE for the NRAs in Cambodia, the Lao PDR, Myanmar, Thailand, and Viet Nam.
- Based on the capacity profiles, priority training needs were identified in the areas of foundations and processes of regulatory practice, post-market surveillance and medical device regulation.
- Course curricula and training materials were developed for pharmacovigilance, medical device regulation, and good regulatory practice. Trainings in the Lao PDR and Cambodia on pharmacovigilance were conducted in August 2017 and training on medical devices was conducted in Cambodia in November 2017.
- Country capacity building road maps were developed, discussed with the NRAs and finalized. In addition, a regional development road map, which informs the Association of Southeast Asian Nations (ASEAN) process of converging regulatory practices, was prepared.
- CoRE has been participating in the Regional Regulatory Partnership (which focuses on regulation of antimicrobials), which has seen its capacity gap analyses integrated into the national work plans developed by the partnership.
- CoRE has conducted additional training sessions in Singapore on regulatory practices as part of its regular activities. Regulators from Viet Nam and Thailand have attended some of these sessions to address identified capacity issues using their own funding.
- The key achievement has been the development of capacity development plans that will support the harmonization of regulatory strengthening efforts by partners and a coherent approach facilitated by CoRE.

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Story behind the numbers

- The success for implementing plans for regulatory capacity building largely depends on the conviction of the NRA on the need for systems strengthening, coupled with a clarity on how this progress can be achieved. The RSPI was developed to identify gaps in the regulatory systems, so that with the resolution of these gaps, the regulatory capacity of the NRA can be brought to the next level to meet the needs of the healthcare system. The findings from RSPI are incorporated with inputs from external regulatory stakeholders e.g., industry association, pharmacy associations, to achieve a degree of validation and triangulation, and covers from organizational structure, governance, and human resources to the key regulatory functions. The NRAs were provided with their individual country assessment reports on the gaps in their regulatory systems, as well as a road map on the recommended actions to help strengthen their systems. These documents provide the necessary information and practical recommendations to help the NRAs prioritize their steps in building regulatory capacity and facilitate timely access to quality health products. Regulatory growth and progress, as of any changes in a large and complex system, is challenging to measure. A longitudinal study is required over a few years to capture the impact of interventions for regulatory systems strengthening. It should also be noted that such growth depends on the political, social, and cultural influences, and therefore a multipronged approach would be required. Efforts to pursue such an approach would require substantial investment and commitment.
- In view of the multiple organizations that are currently assisting the NRAs in regulatory capacity building, there is a need to coordinate these training activities with the primary goal to increase the efficient and effective use of resources. Again, such coordination would require clarity on the needs of the various NRAs. The assessment reports from the ADB-CoRE project were shared (under terms of confidentiality with the respective NRAs) with various partners at the regional platform, including WHO, APLMA, and Therapeutic Goods Administration. In addition, the information from the country road maps for regulatory systems strengthening of the NRAs in the GMS were utilized and contributed to the development of a regional work plan for regulatory systems strengthening. Through this work plan, technical partners can indicate the areas of commitment in regulatory training, which has to move away from a silo-ed, disease-specific approach. This initiative fortifies the effort for partner engagement and supports measures for sustainability of efforts in the GMS.

Outcome 3.2 Improved post-market surveillance of medicines for malaria and other communicable diseases										
Outcome Indicator	2014 Baseline	Status in		Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018				2016	Q2 2018		
1. Number of countries piloting new field detection tools	0	0	1	●	SF field detection tools	No	Yes	Yes	Yes	●
					1. Formal relationships with global and local research institutions established	No	Yes	Yes	Yes	●
					2. Library of active ingredients and finished product profiles developed	No	No	Yes	Yes	●
					3. Report on results of testing and cost-effectiveness evaluation of field detection tools	No	No	Yes	Yes	●
					4. Recommendations on cost-effective post-market surveillance field tools for detecting SF developed	No	No	Yes	Yes	●
2. Number of WPRO and SEARO countries started to report to the global substandard and falsified (SF) medical products reporting mechanism*	0	6	10	●	SF reporting	0	22	22	22	●
					1. Number of countries with staff trained on the WHO global SF reporting mechanism	0	22	22	22	●

Progress: ● Achieved at least 95% of target

* WHO does not divulge information on reporting by individual countries due to confidentiality rules.

Story behind the numbers

- ADB established formal relationships with global and local research institutions with expertise in malaria resistance and quality medicines for improving evidence on use of post-market surveillance tools for quality testing of anti-malarials. A literature survey of current technologies was completed and 11 medicine-quality field detection devices were identified for assessment. Their libraries were developed where necessary and parameters assessed in preparation for the field evaluation in a mock pharmacy.
- The mock pharmacy has been established and the devices shipped to the Lao PDR for field testing. The Lao PDR NRA inspectors were trained on the operation of the devices, and field testing with the Lao NRA was completed by the end of December 2017. An assessment of the cost-effectiveness of the devices and an analysis of their performance has been completed and a multistakeholder meeting, including regulators and inspectors from GMS NRAs, to discuss the results and the implications for the use of selected devices in practice, was held in April 2018. The views from the workshop were incorporated into the final report.
- Training on SF medicines reporting into the WHO global surveillance mechanism was conducted jointly by WHO and USP with ADB support. SF reporting is lagging in the Asia and Pacific countries. Therefore, all WHO/Regional Office for the Western Pacific (WPRO) and WHO/Southeast Asia Department (SEARO) countries were targeted beyond those in the GMS.
- To support GMS countries directly and foster cross-border collaboration, a high-level meeting with heads of NRAs followed by a hands-on training workshop was arranged in conjunction with WHO (April 2017). A national workshop on Strategies to Combat Substandard and Falsified Medical Products was then held in Myanmar (November 2017) in which a national coordination mechanism to combat SF medical products was discussed and adopted. This was followed by a national training workshop for Myanmar Food and Drug Administration (FDA) inspectors on how to prevent, detect and respond to SF medical products. WHO will provide further follow-up in 2018 as well as look to further national workshops.
- A consultant was engaged to assist the Myanmar FDA develop an SF action plan (and implement anti-malarial specific recommendations) and implementation of capacity-strengthening activities. Key information resources were provided to the FDA, a computerized integrated registration and information system was implemented which, following training of regulators and applicants in November 2017, was fully operational by February 2018. Technical support was also provided to the Myanmar FDA in developing a draft mechanism for responding to SF medical products and organizing a national workshop to discuss this, followed by a training workshop for NRA inspectors on SF medical products with input from WHO and USP (Nov 2017).

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Story behind the numbers

- Additionally, the quality control laboratory was linked into the electronic information system and a module for company registrations to be managed through the electronic information system developed. Provincial inspectors were provided with tablets by which they could access the central database in real-time to check registration status and product characteristics as well as submit their reports. Currently registered medicines were assessed for patient safety risks and a national drug safety strategy and pharmacovigilance system proposed for implementation.
- The Myanmar FDA has been supported in moves that promote greater regulatory harmonization and convergence having joined the WHO Collaborative Registration Scheme, participated in the ASEAN Joint Assessment Procedure for registration of medical products and joined the Uppsala Monitoring Centre (a WHO collaborating center on pharmacovigilance) as an associate member. The Myanmar FDA has also participated in the Asia–Pacific Regional Regulatory Partnership.

OUTCOME 4: INFORMATION SYSTEMS

Increased use of quality data, information tools, and technologies to improve malaria and other communicable disease information systems

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q1 2018					2016	Q1 2018		
1. Number of ICT solutions in use in malaria and other communicable disease information systems to improve and harmonize information management in GMS countries	0	0	3**	2	●	1. Surveillance mechanisms for malaria and communicable diseases mapped for GMS countries 2. Recommendations on two ICT solutions to be used in the region 3. Number of ICT solutions tested in GMS countries	No	Yes	Yes	Yes	●
2. Number of countries utilizing harmonized geo-enabled malaria and dengue information systems	0	0	3	3	●	1. Number of countries with prevalence and incidence data for malaria and dengue analyzed 2. Number of countries with developed capacity of government public health experts for application of GIS-based visualization 3. Number of countries with GIS-based visualization system of malaria and dengue incidence and risk established and methodology evaluated 4. Number of countries with policy recommendations for targeting mobile populations in malaria and dengue surveillance and control programs communicated to Ministries of Health***	0	1	3	3	●

Progress: ● Achieved at least 95% of target

● Continued until Q4 2018 through additional funding for the work

GMS = Greater Mekong Subregion, GIS = geographic information system, ICT = information and communication technology.

* Unique Health ID in Cambodia; GIS platform in Cambodia, Myanmar, and Viet Nam; common geo-registry in Cambodia and Myanmar; Disease surveillance system (eCDS v2) in Viet Nam; HL7 and Fast Healthcare Interoperability Resources (FHIR) in Viet Nam.

**GIS platform, common geo-registry and eCDS v2.

***Policy recommendations are being developed currently and will be finalized as population movement results are shared and discussed with ministry of health (MOH) staff. Additional funding support has been secured by MORU to complete this work.

Story behind the numbers

- Analysis of existing surveillance systems in Cambodia, the Lao PDR, Myanmar, and Viet Nam highlighted the need to mainstream and harmonize existing malaria and other communicable disease information system into the routine health management information system (HMIS) to overcome fragmentation of surveillance systems and to allow surveillance for malaria elimination (issue brief published). The analysis recommends the use of unique patient health identifiers to help connect the various vertical disease management programs, such as malaria, to enable better delivery of care and ensure treatment courses for malaria are being completed. A tool for unique patient ID assessment was developed and applied in Cambodia, the Lao PDR, Myanmar, and Viet Nam. Policy recommendations from a brief on unique patient health IDs informed Cambodia's national patient identification (ID) management strategy and the respective implementation plan. These health records (EHR), and automated reporting into vertical diseases information systems through EHRs, government-mandated national IDs will be utilized with linkages to other systems (such as social security). For Viet Nam, a single EHR system is currently being developed and will be piloted in 2019. The findings from Viet Nam's ID and management information systems stock-taking were disseminated during an EHR workshop in February 2018. Potential usage of a unique health ID was incorporated into the executive summary for MOH. The Viet Nam government decided to use its Social Security (VSS) number as the unique number for linking various patient registration systems. Potential next steps on how to use the VSS number as an enabler for interoperability were introduced in an electronic medical records workshop and in technical meetings with MOH. In June 2018, a workshop was held for MOH EHA and private sector health information systems (HIS) solution providers on best practice in identity management and master patient index.
- As countries become more aware of the importance of linking their existing data silos within the health sector, and as they have to rely on routine information systems when malaria cases are decreasing, the development of strategic master plans on HIS is an important step to guide countries in the right direction. Cambodia already finalized its draft HMIS master plan, with ADB support. Myanmar released its strategic action plan for strengthening health information 2017–2021. Viet Nam's Information Technology (IT) Development Plan 2016–2020 was used to establish several new interoperability policies with the MOH in 2018. Additionally, ADB supported the review of the draft version 1 of the Enterprise Architecture with focus on the establishment of a strategy for integration and interoperability of existing information systems across the directorates (preventive and curative) that includes a standards-based approach and a more comprehensive version 2 architecture. Given the MOH plans for a national data center, ADB provided technical expert resource for guidance in best practices in national data centers.
- In many GMS countries, the work on interoperability of client and facility registries is ongoing, as is convergence of communicable diseases information systems and health IT governance. It is becoming increasingly clear that significant investments in backbone information and communication technology (ICT) infrastructure, process improvements, and capacity development are required and that those can also be leveraged by users outside the health sector. ADB worked with Viet Nam to establish a Health ICT action plan. As one of the components and to facilitate ongoing interoperability testing and knowledge based on existing national policies, the Standards and Interoperability Lab for Asia is assisting Viet Nam to establish its interoperability lab at the MOH EHA.
- To achieve interoperability, capacity building and governance in healthcare, standards based on national policies is critical. In Viet Nam, ADB facilitated a national interoperability workshop in March 2018 and held follow-up meetings with public and private solution providers to advance knowledge and use of Health Level Seven (HL7) FHIR for interoperability in disease surveillance and EHR. ADB made recommendations regarding interoperability for the local health commune level information systems (12,000 stations) and assisted the MOH to establish a Viet Nam Interoperability Lab.
- Training health workers in newly enhanced disease surveillance systems is key to ensuring use, improving data quality and promoting comprehensive reporting of communicable diseases. In Viet Nam, ADB supported eight large provincial level electronic communicable disease surveillance (eCDS) trainings, and supported training in clinical terminology (coding) for the MOH Viet Nam Administration of Medical Services. ADB also evaluated digital health training programs and courses and formulated a set of recommendations on how to improve and sustain eHealth capacity at universities.
- Working closely with Viet Nam's General Department of Preventive Medicine, ADB implemented the initial systems development of the Digital Health Frame aimed at disseminating outbreak information to community level. In support of this new system, server equipment was procured.
- Numerous countries continue to invest in DHIS2 implementation as an information system to aid national health statistics reporting. In late 2017, Viet Nam instituted policy to utilize DHIS2 at grass roots level to aid in the annual health statistics reporting, which is now a multiyear manual compilation process. ADB is supporting the report automation by providing technical resources (HISP Viet Nam). Supported activities include MOH training of the trainers and drafting of standard operating procedures (SOPs) for national scale. With Viet Nam's plan to implement a remodeled local health commune structure nationwide, ADB worked with the MOH EHA and the Department of Planning and Finance to develop terms of reference for local to national level information flow and interoperability. The system will utilize DHIS2 for health statistics reporting, establish the EHR and enable HIS interoperability. The local health commune will encompass preventative and curative sectors, inclusive of disease surveillance.
- In Viet Nam, ADB teamed up with the Clinton Health Access Initiative and the National Institute of Malariology, Parasitology and Entomology (NIMPE) to evaluate the country's eCDS and developed a set of recommendations for developing the malaria management system. The General Department of Preventive Medicine and NIMPE are to establish steps for an integrated notifiable disease surveillance system (using eCDS) and malaria management systems. ADB also supported the conduct of facility assessment to inform on malaria service readiness and availability in public health facilities in nine districts of Viet Nam with high malaria transmission rates. A costing tool based on the results of the facility assessment was developed to provide estimates of the cost of addressing current and emerging resource gaps over five-year time scale. Results were discussed in a forum that brought together NIMPE officials and malaria staff at provincial and district level.
- To institutionalize malaria elimination surveillance, a standards-based, geo-enabled information system has to be in place with routine processes linked to an interoperable health information exchange. The project significantly advanced the policy dialog on an enterprise architecture approach to HIS as countries go through their digital transformation. This will ensure that future ICT health investments are sustainable, efficient, effective and directly contributing to country's data and information needs. The scope of the activities also included work on a health IT governance framework, which will help to address data sharing, privacy and security issues. Until those are addressed, data sharing among agencies and countries will not be possible. Moreover, the project built the capacity of MOHs to manage health ICT projects and ensure that development partners support eHealth solutions for communicable disease and malaria programs are scalable and sustainable.

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Story behind the numbers

- The geographic dimension of malaria and dengue is key to enhancing disease surveillance and malaria elimination through improved situational intelligence. It also provides a unique context to link vertical disease programs together through the geo-enabling of the HIS. Among the nine elements defining the HIS geo-enabling framework, two are directly related to ICT solutions: (i) The use of geospatial technologies including GIS; (ii) the availability of a common geo-registry to enable the parallel hosting, maintaining and updating of the master lists for the geographic objects core to public health (health facilities, administrative and reporting divisions, villages).
- MORU and the Health Geolab Collaborative (HGLC, formerly AeHIN GIS lab) worked together to strengthen the technical capacity of the National Malaria Control Programs (NMCPs) as well as other key MOH entities in Bangladesh, Cambodia, Myanmar, Thailand, and Viet Nam through: (i) The development of reference material to ensure the use technology to be embedded in good geospatial data management practices (documentation and promotion of the concept of common geo-registry for example); (ii) The provision of appropriate equipment (hardware and software); (iii) The conduct of National and Regional trainings (also attended by the Lao PDR); (iv) Onsite and remote technical support in mapping and analysis of surveillance data for the whole country for malaria and dengue; (v) The collection of geographic coordinates in the field to improve some of the key layers of information needed for malaria elimination; (vi) The analysis, mapping, and presentation in different forums of countrywide malaria and dengue surveillance data (Cambodia, Myanmar, and Thailand).
- In addition to the above, initial work on assessing the relationship between climate, forest, and malaria using weather station and remote sensing satellite data has been completed with further work ongoing. Analysis of call detail records in Thailand has been completed to model the impact of population movement patterns on malaria and dengue distribution. Final approval for this is pending from the national regulator in Myanmar. Travel survey data from patients with malaria in Cambodia, the Lao PDR, Myanmar, Thailand, and Viet Nam has been analyzed and shared.
- The AeHIN GIS Lab has converted into the HGLC in December 2017 to bring more partners, and therefore resources, to countries in Asia and the Pacific to continue the work started under the umbrella of the RMTF. At the time of closing the RECAP technical assistance (TA), the HGLC counts 16-member institutions including the MOH entities involved in the HIS geo-enabling process and his providing resources accessible principally to the 30 low and middle-income countries in Asia and the Pacific.
- Policy recommendations for targeting mobile populations in malaria and dengue surveillance and control programs have been developed for Cambodia, Myanmar, and Thailand. The final recommendations will be provided once the results of the population movement analysis using call data records have been shared and discussed with MOH staff. Additional funding support has been secured by MORU to complete this work.
- Increased investment in digital health can support improved malaria surveillance and response. Part of ADB's digital health strategy guidance and digital health impact framework includes an example of an investment case strategy for malaria services and an implementation guide. It was disseminated to GMS countries in a regional workshop during the 2018 Prince Mahidol Awards Conference.

OUTCOME 5: LABORATORY DIAGNOSTICS AND SURVEILLANCE

Improved capacity of laboratory diagnostics and surveillance system for malaria and other communicable diseases, including cross-border coordination

Outcome 5.1 Increased diagnostic testing for malaria in project areas of Cambodia, Lao PDR, and Viet Nam											
Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	2017					2016	2017		
1. Annual blood examination per 100 pop at risk for malaria in the project areas*						Diagnostic capacity for malaria	0	0	83	80	●
Cambodia Preah Vihear Province	11.2	6.7	8.4	10.0	●	1. Proportion of health facilities in project areas equipped with malaria diagnostic equipment	0	100	100	70	●
							0	78	100	100	●
							0	0	100	100	●
Lao PDR Champassack Province	12.7	7.9	9.2	10.0	●	2. Proportion of laboratory staff in target provinces trained in malaria diagnosis	0	0	96	70	●
Attapeu Province	25.5	13.4	18.5	10.0	●			100	100		●
Saravane Province	14.2	8.3	8.4	10.0	●			100	100		●
Sekong Province	17.4	12.1	14.6	10.0	●			100	100		●
Viet Nam Binh Phuoc Province	12.5	15.6	10.5	10.0	●			100	100		●
Dak Nong Province	12.8	10.4	13.3	10.0	●			100	100		●

Progress: ● Achieved at least 95% of target ● Substantial progress achieved

CAM = Cambodia, LAO = Lao People's Democratic Republic, VIE = Viet Nam.

* Data from the Ministry of Health

** Of the 182 commune health stations in the project areas, only 40 required new microscopes for malaria testing

Outcome 5.2 Improved surveillance and response for malaria and other communicable diseases in project areas of Cambodia, Lao PDR, and Viet Nam including in cross-border areas

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	2017					2016	2017		
1. Proportion of disease outbreaks (including malaria) in project areas reported within 24 hours						Surveillance capacity for malaria					
Cambodia Preah Vihear	100	100	100	80	●	1. Proportion of health facilities and laboratories in project areas equipped with electronic reporting instruments for malaria surveillance	CAM	0	0	100	●
							LAO	0	0	100	●
							VIE**	100	100	100	●
							CAM	0	0	100	●
							LAO	0	32	77	●
							VIE	0	50	50*	●
Lao PDR Champassack	100	100	100	80	●	Cross-border coordination and response for malaria					
Attapeu	50	100	100	80	●	3. Number of coordinated cross-border action plans developed based on GMS malaria elimination strategy in targeted border provinces	CAM	0	0	1	●
Saravane	100	80	100	80	●		LAO	0	2	2	●
Sekong	100	60	83	80	●		VIE***	0	-	3	
Viet Nam Binh Phuoc	100	100	100*	80	●	4. Number of village health workers at border provinces trained in malaria control and treatment	CAM	0	0	331	●
Dak Nong	100	100	100*	80	●		LAO	0	0	322	●
							VIE	0	236	236*	●
2. Proportion of border disease outbreaks (including malaria) in project areas reported across borders within 24 hours											
Cambodia Preah Vihear	NA	NA	NA	50							
Lao PDR Champassack	100	100	100	50	●						
Attapeu	50	100	100	50	●						
Saravane	100	80	100	50	●						
Sekong	100	60	83	50	●						
Viet Nam Binh Phuoc	100	100	100*	50	●						
Dak Nong	100	100	100*	50	●						

Progress: ● Achieved at least 95% of target

● Substantial progress achieved

CAM = Cambodia, LAO = Lao People's Democratic Republic, NA = no outbreaks of regional or international relevance, VIE = Viet Nam.

* As of Q1 2017

** Facilities already have the needed equipment

*** No specific cross-border action plans were developed by provinces but six cross-border activities were incorporated into the provincial annual operational plans that were all implemented

Story behind the numbers

- The additional financing for malaria-related activities aimed to direct efforts toward malaria control and elimination through regional and country structures and processes already established under the ADB Communicable Disease Project 2 (CDC2). Malaria activities funded under the RMTF complemented and augmented the national malaria programs in Cambodia, the Lao PDR, and Viet Nam and were synchronized with donor partners' ongoing involvements in malaria and in addressing the spread of artemisinin resistance in the region.
- The RMTF contributed to the significant decrease in the incidence of *P. falciparum* malaria in the project sites (from 17.3 cases per 1000 population in 2014 to 1.8 in 2017 in the project sites of Cambodia, and from 15.9 in 2014 to 1.6 in 2017 in the project sites of the Lao PDR).

Lao PDR

- The strategies and activities funded under the RMTF in the Lao PDR were identified in consultation with development partners and stakeholders working in malaria to ensure that the RMTF investments would lead to value for money and reap maximum results without duplicating efforts.
- In the project sites, vector surveillance and control guidelines and training manuals were updated, vector control equipment were provided, and staff and village health workers were trained.
- Behavioral change communication/IEC materials were developed targeting specific audiences via TV and radio campaigns. Regular mobile health education sessions were conducted in schools and villages in high prevalence areas.
- Provincial and district health staff were trained on malaria case management and treatment while village health workers were also trained on malaria control and surveillance.
- SOPs and guidelines were updated and trainings conducted on malaria diagnosis and microscopy and laboratory quality assurance. All district-level facilities in the project sites were already equipped with microscopes. Hemoglobinometers were requested instead to address the high incidence of *P. vivax* cases in the Lao PDR. Relevant staff were trained on the use of the machine and on the administration of primaquine for *P. vivax* treatment.
- The project supported malaria case surveillance and reporting at central, provincial and district levels, including passive and active case detection and directly observed treatment. Staff from central, provincial district and checkpoints were provided with telephone cards for disease surveillance and reporting. They were also trained on the DHIS2 reporting system for malaria.
- Cross-border disease information exchange included malaria. All provincial annual operations plan included malaria targets and activities.

Cambodia

- The RMTF support in the project site in Cambodia (Preah Vihear) was to pilot *P. falciparum* elimination strategies and interventions.
- Through the RMTF, the quality of provincial laboratory services was improved through training and supportive supervision of laboratory staff, purchase of laboratory equipment (Loop-mediated isothermal amplification [LAMP], microscopes), materials, reagents, and other laboratory consumables. LAMP devices were provided for the detection of malaria cases with low parasite density. The microscopes provided had mounted cameras to capture and share digital images of the blood smears, shortening diagnosis time and subsequently resulting to timely treatment. The provision of such microscopes complemented the innovative microscopy quality assurance and control procedures that were implemented in the target health facilities.
- The quality of clinical diagnostic and case management was improved through the training of health staff on malaria clinical management, management of stocks and supplies, and the re-establishment of the functions of village malaria workers and training them to improve their skills on clinical diagnosis and case management.
- The surveillance and response system was expanded to include the provision of training to health staff and village malaria workers on proper data management and reporting, real-time case notification, village stratification and index case investigation. Shifting from a previously passive case detection system at public health facilities to a new model that combines existing passive system and active system of screening malaria cases at communities and households resulted in increased case detection rate in the project sites. Foci investigations were also conducted along with active case detection and investigation.
- A digital data device (DDD) was introduced and used by health center staff and village malaria workers for real-time malaria positive cases reporting and notification using a standardized template with complete set of information for case investigation. MOH reported that the use of the DDD has improved malaria surveillance and response.
- The project also engaged registered private providers in case detection, quality treatment, follow-up, data management, and case reporting. Workshops on pharmacovigilance (malaria drug use) were provided to health professional in both public and private sectors. Rational use of anti-malarial drugs was encouraged with supportive supervision, and partnership with private providers was established.
- The project supported the formation of malaria elimination taskforce comprised of provincial health offices, local authorities, non-health agencies, and development partners operating in the project sites.
- IEC materials were developed and disseminated through multi-media channels, including billboards targeting migrant and mobile populations (MMPs) on malaria prevention.
- Disease information exchange among border provinces included malaria. All provincial annual operations plan also included malaria targets and activities.
- The strategy and initiatives developed by RMTF in Preah Vihear for malaria elimination was reported by MOH to have been expanded to other areas in the country.

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Box continued

Story behind the numbers

Viet Nam

- The malaria situation in the project sites in Viet Nam remained relatively stable since 2016 with vector control coverage maintained as planned, and the diagnosis and treatment of malaria followed the MOH protocol.
- Trainings on malaria surveillance was provided to 88 provincial and district staff, and 194 commune staff. Trainings on laboratory techniques and on the use of microscopes were provided to 30 provincial and district staff.
- Supervisions were fielded to the provincial malaria centers, district health centers, and commune health stations.
- Four rounds of malaria surveillance, active case detection and treatment were conducted in four districts of Binh Phuoc.
- Four rounds of monitoring the prohibited circulation and use of monotherapy, counterfeit and poor quality drugs at the medical stations and pharmacies were conducted in the districts and towns of the two project provinces. No violations to the regulations were detected.
- The project supported orientation workshops on malaria control for Cambodia–Lao PDR–Viet Nam border provinces (October–December 2016 and February–March 2017).
- Monthly information sharing including malaria was conducted in 13 of 14 border provinces in Viet Nam. All provincial annual operations plan also included malaria targets and activities.

Outcome 5.3 Increased diagnostic testing for malaria in project areas of Myanmar ^{a,b,c}											
Outcome Indicator	2014 Baseline	Status in 2016		2014 Baseline	Output Indicator	Progress	Target	Status in Q2 2018		Target	Progress
		2016	Q2 2018					2016	Q2 2018		
1. National malaria diagnostic quality assurance guidelines endorsed by the National Malaria Control Program					Diagnostic capacity for malaria						
Mon State	No	No	Yes	44	1. Proportion of health facilities in project areas equipped with malaria diagnostic equipment**	●	Yes	0	100	100	●
Sagaing Region	No	No	Yes	24	2. Proportion of laboratory staff in target provinces trained in malaria diagnosis***	●	Yes	0	96	100	●
					3. National malaria diagnostic quality assurance guidelines developed	●	Yes	No	Yes	Yes	●
2. Annual blood examination per 100 pop at risk for malaria in the project areas											
Mon State (Project townships average) (Mawlamyaing, Belin, Paung, Kyaukhto)	4.2	-	13.5*			●	8.0****				
Sagaing Region (Project townships average) (Hkamti, Homalin, Paungbyin, Taze, Monywa, Pale)	3.1	-	24.1*			●	8.0****				

Progress: ● Achieved at least 95% of target

Q = quarter

* Data for 2017

** Total number of 43 health facilities

*** Total number of 83 staff

**** ABER target for 2020 in Myanmar, WHO-Malaria NSP 2016-30

Note: 2016 data was not collected because the project interventions started only in 2017.

^a This outcome indicator is used only for Myanmar. RCDDTA8959 supports the development of national guidelines on laboratory diagnostic and surveillance and is consistent with the Monitoring and Result Framework of the ADB Technical Assistance Document for RCDDTA8959 developed with concurrence from the Government of Myanmar. For Myanmar, the output indicator on cross border coordination is not included since the project has a limited scope on it while focusing on internal migrant and mobile populations. RCDDTA8959 also supports MMP-related activities in Cambodia and the Lao PDR.

^b Estimated total number of beneficiaries (1,984,915 under laboratory diagnostics; and 969,585 under surveillance).

^c RCDDTA8959 supports the Government of Myanmar in developing of a model to strengthen its laboratory diagnostic and surveillance system at local level in two project areas (Mon State and Sagaing Region), which is expected to roll out in the entire country, while simultaneously supporting the government capacity at the central level.

Outcome 5.4 Improved surveillance and response for malaria and other communicable diseases in project areas of Myanmar

Outcome Indicator	2014 Baseline	Status in		Target	Progress	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2_2018					2016	Q2_2018		
1. National malaria surveillance guidelines endorsed by the National Malaria Control Program							0	0	97	100	●
Mon State	No	No	Yes	Yes	●	1. Proportion of health staff in project areas equipped with electronic reporting instruments for malaria surveillance* 2. Proportion of health staff in target provinces trained in malaria surveillance with electronic reporting instrument* 3. National malaria surveillance guidelines developed	0	0	97	100	●
Sagaing Region	No	No	Yes	Yes	●		No	No	Yes	Yes	●
2. Proportion of disease outbreaks (including malaria) reported within 24 hours											
Mon State	NA	NA	**	80	●						
Sagaing Region	NA	NA	**	80	●						

Progress: ● Achieved at least 95% of target

NA = NA – no outbreaks of regional or international relevance, Q = quarter.

*Total number of health staff and village health volunteers

** All malaria cases were reported real-time within 24 hours by mDMS (mobile database malaria surveillance)

NA – no outbreaks of regional or international relevance

Story behind the numbers

- The RMTF TA in Myanmar was designed to develop (i) a model to strengthen capacities for laboratory diagnostics and surveillance for malaria and communicable disease at local and national levels, and (ii) a model to strengthen health service delivery system for MMP, focusing on internal MMP with involvement of the private sector.

On malaria laboratory quality assurance and malaria surveillance in Myanmar

- The TA focused on strengthening data management systems for malaria surveillance including the upgrading of analytical tools for decision-making, scale up and maintenance of data management systems, cooperation with volunteer malaria workers (VMW) on routine reporting, and real-time reporting. The assistance also focused on upgrading laboratory diagnostic quality assurance by implementing a proficiency testing and cross-checking system in project townships based on the revised malaria quality assurance (QA) manuals and SOPs and through training on expanded malaria microscopy.
- The NMCP with support from partners developed a mobile Data Management System (mDMS) piloted in the Mawlamyine, Beline and Hkamti townships to strengthen the quality of monthly malaria data reporting and to establish real-time notification of malaria positive cases from VMWs, basic health staff (BHS), hospitals and the private sector. The notification is done via SMS/Viber or mobile application to the State/Region and Township Vector-Borne Disease Control offices (VBDC) data focal person. Case investigation is expected to be conducted by BHS within 72 hours and public health response by the Township VBDC within 7 days. Surveillance equipment for the mDMS were procured and distributed to village volunteers. Trainings on mDMS were provided to BHS and volunteers at township level.
- Commodities for surveillance were procured and distributed to the central health offices, regional and state and township medical offices: central server at NMCP, 31 laptops, 200 mobile phones for village health workers, 21 external hard disk drives, 11 printers and 44 cartridges, 8 projectors and screens, and 12 SIM card routers. Laboratory equipment were also procured and distributed: 31 microscopes with 4 for the National Health Laboratory (NHL), 10 for Sagaing and 17 for Mon, microscope with digital camera for NHL, 5-headed multiviewing teaching microscope for NHL, lab equipment and reagent for malaria microscopy, cabinets and benches for the labs, 13 desktop computers and four printers, and 10 generators for Sagaing region.
- Different trainings were conducted after the distribution of lab equipment, namely: on lab QA and microscopy for lab technicians, on lab quality control crosschecking by NMCP, panel testing by NHL, and on-the-job/refresher courses.

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Box continued

Story behind the numbers

- A joint monitoring and quality assurance system was established, and monitoring and supervision were conducted in collaboration with NMCP and NHL. The SOPs and manual on Microscopy and Laboratory QA were approved by the Union Minister of the ministries of health (MOHs) in April 2017, and the manual was approved by the MOHS-NMCP in September 2017 for nationwide use. These materials have been distributed nationwide and used for training MOH staff in the project areas. Likewise, a malaria microscopy algorithm and malaria reference slide posters were developed for use by lab technicians nationwide.

- Lab and surveillance initiatives under the project will be replicated by NMCP in other parts of the country supported by the DEFEAT Malaria project of United States Agency for International Development.

On reaching mobile and migrant populations in Cambodia, the Lao PDR and Myanmar

- A malaria vulnerability and risk assessment tool (health facility and malaria services mapping, migration and mobility profile and movement, behavior and awareness assessment) was developed and used in project sites in Cambodia, the Lao PDR, and Myanmar. Results were shared during the Global Malaria Week in Nay Pyi Taw in December 2017. In the Lao PDR, tracking of MMP movement was conducted in target villages to monitor the trend in movement of MMPs including forest and host communities, and to identify the locations in which they stay.

- Training on baseline assessment research and data collection techniques was conducted in Cambodia, the Lao PDR, and Myanmar. Village health volunteer and peer educator training was also conducted in the project sites in the Lao PDR and Myanmar with 110 volunteers participating.

- Mobilization of migrant workers and/or their family members trained as malaria volunteers as a common approach was adopted as agreed with the MOH of Cambodia, the Lao PDR and Myanmar. Volunteer training and outreach activities for MMPs have been conducted. The training informed on malaria vectors, symptoms, diagnosis, treatment, and prevention.

- There were 1,956 outreach participants in the Lao PDR (1,082 in Khong district and 874 in Phouvong district) while in Myanmar there were 13,760 participants in the three project townships. Volunteers have carried out IEC sessions in worksites as well as project sites in project areas. Malaria events, campaigns, and World Malaria Day celebrations were held to attract public's attention on the work of volunteers and availability of rapid diagnostic test services and treatment.

- To promote sustainability and harmonization with national systems, specific efforts have been made to ensure that activities and case data were incorporated into the reporting systems of National Malaria Centers. The volunteers provided testing and treatment onsite according to national guidelines, with all case data for patients tested and outcomes recorded and communicated for inclusion in the national systems following existing malaria patient register formats and guidelines for ease of integration into national reporting. Malaria volunteers fill in monthly report forms and submit to township and/or district level health teams, who subsequently submit monthly data to provincial, state and subsequently central level.

- The worksite project in Myanmar distributed long-lasting insecticidal nets provided by the National Malaria Control Program. The project in the Lao PDR on the other hand, guided by the recommendations of the situational assessment, distributed hammock nets, mosquito coils, sprays, and patches targeting forest-goers and MMPs.

- Technical input to Cambodia's MOH Operational Guidelines for Mobile, Migrant and other Underserved Populations in the Context of Malaria Elimination was provided through the project. Agreement was also reached by the MOH of the three countries on the definition of MMPs.

- The Lao PDR's central and provincial health offices committed to sustain (i) the training and mobilization of mobile traders from the Lao PDR and Viet Nam who ply around the district, as malaria peer educators and can effectively reach MMPs; (ii) the identification and training of the cam or worksite managers and/or directors as volunteers, effective approach to engage the private sector in malaria prevention and treatment; (iii) development of innovative information and education/behavioral change communication materials for specific MMP targets, (iv) systematic identification and monitoring of MMPs through outreach activities of the trained volunteer health workers; and (v) development and use of reporting forms for MMPs that can inform the national malaria reporting system. In Myanmar, similar approaches were conducted where 55 worksite managers were engaged as volunteers and village health volunteers in plantations, gold and jade mines trained and mobilized.

- In Myanmar, the project intervention for MMPs in the project sites will be sustained by the GF.

OUTCOME 6: PROMOTION AND PREVENTION

Increased capacity to apply health impact assessment to consider determinants of health and communicable diseases in infrastructure projects

Outcome 6.1 Increased capacity to apply health impact assessment (HIA) in infrastructure projects at country level										
Outcome Indicator	2014 Baseline	Status in		2014 Baseline	Output Indicator	2014 Baseline	Status in		Target	Progress
		2016	Q2 2018				2016	Q2 2018		
1. Number of countries that started to apply HIA in infrastructure projects (LAO, THA)	0	0	2	0	Situational analysis and needs assessment 1. Number of HIA country profiles (CAM, LAO, MYA, THA, VIE)	0	0	5	5	●
2. Number of infrastructure projects that applied HIA (Savannakhet, Mukdahan, Hongsa)	0	0	3	0	Country HIA guidelines 2. Number of countries with country HIA guidelines developed 3. Regional HIA framework for special economic zones developed	0	0	3	3	●
Capacity development										
				No	4. HIA training modules developed	No	No	Yes	Yes	●
				0	5. Number of countries with staff trained in HIA	0	0	4	4	●
				No	6. HIA curriculum developed for graduate public health and environmental programs	No	No	Yes	Yes	●
				0	7. Number of countries that integrated HIA curriculum into graduate public health and environmental programs	0	0	4	4	●
				0	8. Number of countries that started to offer HIA in graduate public health and environmental programs	0	0	4	4	●
				0	9. Regional network of HIA experts and universities established	0	0	1	1	●
Policy and governance										
				0	10. Number of countries with costed HIA proposal	0	0	5	5	●
				0	11. Number of countries with HIA policies in place or developed	0	0	3	3	●
				0	12. Number of countries with intersectoral coordination on HIA	0	0	3	3	●
				0	13. Number of HIA policy briefs developed	0	0	2	2	●

Progress: ● Achieved at least 95% of target

CAM = Cambodia, HIA = health impact assessment, Lao PDR = Lao People's Democratic Republic, MYA = Myanmar, THA = Thailand, VIE = Viet Nam.

Story behind the numbers

- ADB worked at three levels (country, regional, within ADB) to improve HIA in the region. The aim was that improved HIA will contribute to better community health outcomes as well as help mitigate vector-borne diseases risks in large-scale infrastructure projects since many mobile and migrant people are involved in construction sites. Country-level activities concentrated in the five GMS countries i.e. Cambodia, the Lao PDR, Myanmar, Thailand, and Viet Nam.
- Situational analysis and needs assessment on HIA were conducted in the five GMS countries. These countries are at various stages of HIA development and practice. All five countries have the potential to harness HIA as part of their malaria prevention and control measures and ADB built on this opportunity to accelerate HIA in the GMS.
- Country proposals with work plans and budget estimates had been prepared in November 2016, which defined key activities to achieve stronger national HIA practice. Based on these country proposals, national HIA coordinators, who had worked closely with country counterparts, were recruited to ensure timely implementation of activities and to have institutional arrangements in place.
- Development of HIA capacity at the country level required intersectoral coordination and collaboration between the MOH, the Ministry of Environment (MoE) and other related government offices. Although there were no formal institutional arrangements between these concerned ministries ADB was able to facilitate collaboration between them. This enabled better understanding among government stakeholders on the need to explicitly integrate health into existing impact assessments (i.e., environment and social) and consequently drove the momentum for HIA.
- Development of HIA capacity also required building the skills of existing staff both from the public and private sectors to have HIA practitioners that can meet the needs for effective HIA in the long-term. Training in HIA focused on awareness creation, knowledge expansion and skills development with the basic principles and practice of HIA, the application of tools in a realistic manner, exploring decision-making criteria and options for institutional arrangements between the health and environment sectors in support of coordinated approach to HIA. Training in HIA targeted government staff from MOH and MoE.
- To generate examples of good practices, case studies to demonstrate HIA were undertaken in nominated projects of various sectors (i.e., energy, road development, special economic zones [SEZs], water and sanitation, and urban development). HIA demonstration identified the need for stronger components on community health and safety and yielded recommendations for Public Health Management Plan that include clear specific indicators to enable monitoring and reporting on health outcomes and possible risks to community health.
- Sound policy and regulatory frameworks were important considerations in strengthening HIA practice in the GMS. Support was provided for the development of national HIA guidelines. Government counterparts from Cambodia, Myanmar, and Viet Nam have completed their respective draft HIA guidelines, including the integration of health into the environment impact assessment. The Lao PDR reviewed to years of HIA experience and discussed the updating of existing national HIA guideline as well as the development of sectoral guidelines. The Lao PDR completed a draft HIA guideline specific for energy sector, specifically for thermal power plants.
- A GMS HIA framework for SEZs was produced providing enhanced guidance for identifying, mitigating, and managing health risks and impacts related to the increased industrial and economic development in SEZs and economic corridors. The framework promotes in-country HIA processes and response to related transboundary issues including those associated with mobile and migrant worker populations in SEZs and economic corridors. The HIA framework positioned people directly affected by SEZ development at the center as they directly interface with the SEZ and its associated activities. The HIA Framework for SEZs for the GMS can be accessed at <https://www.adb.org/publications/health-impact-assessment-framework-economic-zones-gms>
- Country-specific HIA guidelines for the Lao PDR and Thailand have been developed based on country requests. HIA focal from MOH of these countries are now elevating these guidelines at policy level. Myanmar government also reached out for TA on the development of management plans for Thilawa SEZ, specifically on the management of hazardous materials, waste, vector-borne diseases and emergency preparedness and response. Together with the Thilawa SEZ Management Committee and representatives from business sector, the management plans were reviewed and in the process of being put into effect in Thilawa SEZ. The framework was also applied in an integrated border development project at one of the borders between Myanmar and the People's Republic of China (PRC), at the Lincang border area. Increased risks from imported malaria from Myanmar and the need to provide health services to migrant and mobile population groups have been identified.
- Bilateral cooperation between the Lao PDR and Thailand on transboundary health issues was another important initiative. MOH and MoE from both countries including at provincial and district levels agreed to a joint health surveillance in relation to projects in energy sector i.e., Hongsa thermal power plant located at Xayaboury, Lao-Nan, Thai border; and in SEZs i.e. the Lao PDR Savan-SENO SEZ and Thailand Mukdahan SEZ both located in the border of these two countries.
- Collaboration with academic institutions has been initiated to help sustain HIA capacity development including in expanding HIA teaching and research in the region. HIA curricula (standalone HIA, HIA in environment impact assessment, HIA short course for health, planning or environment) were developed with Curtin University-WHO Collaborating Center in HIA, which was used for HIA certificate course offering in five GMS universities (i.e., University of Health Sciences, University of Public Health Yangon, Mahidol University, Hanoi Medical University, Ho Chi Minh City University of Medicine and Pharmacy). The same has been adopted to update current curriculum of public health and environment faculties of five GMS universities.
- In collaboration with Curtin University-WHO Collaborating Center in HIA, an HIA network was established as a key resource to countries on guidelines and tools, research and policy development. The network also serves as collaboration and knowledge sharing platform for HIA practitioners. More information about the HIA Network Asia Pacific can be accessed at <http://www.hianetworkasiapac.com/about/>

Outcome 6.2 Increased capacity to apply HIA at ADB

Outcome Indicator	2014 Baseline		Status in 2016		Status in Q2 2018		Target	Progress	Output Indicator	2014 Baseline		Status in 2016		Status in Q2 2018		Target	Progress	
	0	0	0	4	4	4				0	4	No	No	Yes	Yes			Yes
1. Number of ADB-supported infrastructure projects in malaria-endemic areas that applied HIA* (CAM, MYA, VIE)	0	0	0	4	4	4	4	●	1. ADB HIA tools developed (sourcebook and checklists) 2. ADB HIA training modules developed 3. Number of ADB staff trained in HIA 4. ADB HIA tools integrated into ADB processes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	●

Progress: ● Achieved at least 95% of target *Desktop review

ADB = Asian Development Bank, CAM = Cambodia, HIA = health impact assessment, MYA = Myanmar, VIE = Viet Nam.

Story behind the numbers

- Demonstration of HIA was originally conducted in four ADB-financed projects, namely Cambodia Rural Water Supply and Sanitation Sector, Mandalay Urban Services Improvement Project 1, Eindu-Kawkaeik Road Improvement, and Ho Chi Minh City Wastewater and Drainage System Improvement. These projects served as HIA case studies undertaken in coordination with government counterparts and project teams. The HIA included a strong focus on malaria and other communicable diseases. Scoping and validation of findings through desk review (i.e., literature and secondary data) and site inspections and interviews, and report writing has been completed. There has increased demand among ADB project officers to conduct HIA for new projects, and initial HIA scoping was conducted for Yunnan-Lincang Border Economic Cooperation Zone Development Project, and Viet Nam Health Human Resource Development Project 2. Close collaboration with project teams encouraged better understanding and practice of HIA.
- An HIA sourcebook was developed to provide technical guidance and good practice examples to ADB staff on how to optimize community health and safety in ADB projects. Experiences from the demonstration projects provided valuable inputs to the sourcebook. The sourcebook was presented at the 2018 spring meeting of the Multilateral Financial Institutions Working Group on Environmental Social Standards. It includes recommendations to include malaria and other vector-borne disease specific questions in rapid environmental assessment tools.
- Financed from other sources, several HIA introductory courses were organized for ADB staff and faculty staff from Curtin University and other HIA experts served as resource persons. Lessons from RMTF related HIA activities were shared. With ADB budget, an intensive HIA course *Safeguards Deep Dive, Labor Standards and Health Impact Assessment* has been developed.

KEY ACTIVITIES AND MILESTONES PROGRESSING TOWARD RESULTS

OUTCOME 1: LEADERSHIP

Strengthened leadership, decision-making, and accountability for eliminating malaria and addressing communicable disease threats

	2015	2016	2017
Outcome 1.1 Increased commitment and collaboration for malaria elimination and addressing communicable disease threats	<p>Development of malaria elimination road map</p> <p>Presentation of the malaria elimination road map in the APLMA Senior Officials Meetings</p> <p>Milestone: Malaria elimination road map endorsed by 19 heads of government</p>	<p>Milestone: One additional malaria elimination road map endorsed by head of government</p>	<p>APLMA becomes independent</p>
Outcome 1.2 Improved use of information for decision-making and accountability for malaria elimination and addressing communicable disease threats	<p>Development of concept note and design of the Malaria Elimination Dashboard</p> <p>Milestone: Dashboard concept presented at regional World Health Organization (WHO) meetings</p>	<p>Data compilation for the Malaria Elimination Dashboard technical annex</p> <p>Data compilation for the Malaria Elimination Dashboard indicators</p> <p>Milestone: Partial database for the Malaria Elimination Dashboard developed</p> <p>Milestone: Leaders dashboard prototype approved by Asia Pacific Leaders Malaria Alliance (APLMA) Senior Officials Meeting</p> <p>Review of regional funding models</p> <p>Development of malaria elimination framework and costing tools</p> <p>Collection of data in countries</p> <p>Milestone: Draft framework costing tools for malaria elimination developed</p>	<p>Continue data compilation for the Malaria Elimination Dashboard indicators</p> <p>Finalization of the Malaria Elimination Dashboard</p> <p>Presentation of the Malaria Elimination Dashboard in the 2017 APLMA Senior Officials Meeting</p> <p>Milestone: Arrangements for dashboard publication made</p> <p>Continue collection of data in countries</p> <p>Development of country and subregional investment cases</p> <p>Milestone: Country and subregional investment cases at final stages of development produced</p> <p>Development of framework, tools and collection of data for private sector business case studies</p> <p>Milestone: Draft business cases for the private sector developed</p> <p>Development and application of toolkit for assessing efficiency gains</p> <p>Milestone: Toolkit applied in at least one country</p> <p>Development of framework and collection of data for development of recommendations for financing options</p> <p>Milestone: Draft report on recommendations for financing options available</p> <p>Presentation of investment cases, toolkit for assessing efficiency gains, and recommendations for financing options in the APLMA Senior Officials Meeting</p> <p>Milestone: Presentation of the financing tools agreed with APLMA in the next APLMA Senior Officials Meeting</p>

Legend: Activity completed; milestone reached

OUTCOME 2: FINANCING

Increased financing for malaria elimination and addressing communicable disease threats

	2015 and 2016	2017	Q1 and Q2 2018
Outcome 2.1 Increased financing for malaria elimination and addressing communicable disease threats	<p>Conduct of consultations on financing malaria elimination</p> <p>Milestone: New financing mechanisms for malaria elimination identified</p> <p>Review of innovative finance, public-private partnership models, and financial markets products to identify potential models</p> <p>Development of concept paper for ADF regional health security</p> <p>Milestone: Concept and eligibility criteria for ADF grant on regional health security set aside approved; ADF grant proposals approved</p> <p>Development of project for GMS health security loan</p> <p>Milestone: GMS health security loan approved</p> <p>Development of concept paper for ADB health bond</p> <p>Milestone: Draft concept paper for ADB health bond produced</p>	<p>Continued dialogs on innovative financing for malaria elimination and response to communicable disease threats</p> <p>Milestone: ADB health bond launched</p>	<p>Work with ADB regional departments, identify and map cofinancing opportunities with GFATM and/or other donors</p> <p>Organize the first collaboration meeting between partners to support the ADB-GFATM memorandum of understanding, including discussion on cofinancing opportunities, and a detailed design of blended financing modalities (loan buydowns, grants, risk transfers, guarantees)</p> <p>Milestone: Cofinancing opportunities are identified and further developed into “project mapping” for discussion with GFATM-ADB</p> <p>Milestone: ADB-GFATM meetings held with concrete collaboration and investment priorities agreed upon</p>

Legend: Activity completed; milestone reached

OUTCOME 3: MEDICINES

Improved regulatory capacity to support increased availability and use of quality-assured health products for malaria and other communicable diseases

	2015 and 2016	2017	Q1 and Q2 2018
Outcome 3.1 Improved operational capacity of national regulatory agencies (NRAs)	<p>Regional platform for regulatory systems strengthening and convergence for developing member countries established</p> <p>Development of regulatory systems profiling instrument</p> <p>Milestone: Regulatory systems profiling instrument developed</p> <p>Assessment of NRAs</p> <p>Development of NRA strengthening road maps</p> <p>Milestone: NRA capacity profiles developed</p>	<p>Development of training modules</p> <p>Conduct of trainings for NRAs</p> <p>Milestone: Draft training modules developed</p>	
Outcome 3.2 Improved post-market surveillance of medicines for malaria and other communicable diseases	<p>International partners identified to assess new quality testing tools for post-market surveillance</p> <p>Literature review of current evidence regarding utility of rapid diagnostic devices for assaying medicine quality</p> <p>Milestone: Suitable field detection tools for evaluation identified</p> <p>One country agrees to pilot new quality testing tools for post-market surveillance</p> <p>WHO training on Substandard and Falsified **medicines**?</p> <p>Two training workshops on substandard and falsified (SF) **medicines**? for NRAs convened, country focal points established.</p> <p>Milestone: NRA SF focal points identified and trained.</p>	<p>Development of library of active ingredients and finished product profiles</p> <p>Laboratory- and field-based testing of field detection tools</p> <p>High-level Greater Mekong Subregion SF meeting and follow-up training workshop to promote regional collaboration</p>	<p>Cost-effectiveness analyses of the field detection tools</p> <p>Development of recommendations on cost-effective post field detection tools for detecting SFs</p> <p>Country dialogs to discuss appropriate implementation of new field detection tools</p> <p>Milestone: Draft set of recommendations developed</p>

Legend: Activity completed; milestone reached

2015 and 2016	2017	Q1 and Q2 2018
<p>Outcome 3.2 Improved post-market surveillance of medicines for malaria and other communicable diseases</p>	<p>Myanmar NRA strengthening</p> <p>Coordination meetings held with Myanmar NRA</p> <p>Milestone: Draft 5-year development plan for pharmaceuticals-related components of NRA agreed</p> <p>Computerized medicines registration and information system installed and training conducted</p> <p>Milestone: Training modules developed and schedules agreed with NRA</p> <p>Milestone: Registration and information software used in one unit in the NRA</p> <p>Conducted review of patient safety of registered medicines, developed implementation plan for pharmacovigilance center. Myanmar NRA joins WHO Collaborative Registration Scheme, participates in ASEAN Joint Assessment Programme and joins WHO pharmacovigilance network. Agreement with Australian NRA to use patient information leaflets.</p> <p>Milestones: (i) Other ASEAN NRA agree to a formal exchange of information; (ii) Myanmar NRA joins the WHO HINARI system; (iii) New written SOPs and decision trees implemented; (iv) Standard patient information leaflets adopted</p> <p>Myanmar national workshop on SF medical products held, national SF coordination mechanism adopted and Myanmar NRA inspectors trained on SF response.</p> <p>Milestone: National coordination mechanism to combat SF medicines adopted</p>	<p>Computerized information system extended and linked to quality control laboratory and post-marketing inspection module</p> <p>NRA inspectors equipped and trained to have electronic access and reporting with central registration database.</p>

Legend: Activity completed; milestone reached

OUTCOME 4: INFORMATION SYSTEMS

Increased use of quality data, information tools and technologies to improve malaria and other communicable disease information systems

2015 and 2016	2017	Q1 and Q2 2018
<p>Inventory of surveillance mechanisms for malaria and communicable diseases in GMS countries</p> <p>Stakeholder and ID system mapping in MYA, CAM, and LAO</p> <p>Set up interoperability laboratory in Cambodia</p> <p>Milestone: Report on available IDs</p>	<p>Stakeholder and ID system inventory in Viet Nam</p> <p>ID toolkit development</p> <p>Develop business case for unique health ID</p> <p>Milestone: Draft ID toolkit available</p> <p>Milestone: Recruitment of local and international consultants to support VIE</p>	<p>Develop guidelines for set up of core health information exchange (HIE) elements</p> <p>Provide technical resources for testing existing systems for standards-based interoperability</p> <p>Provide training at provincial level for notifiable disease surveillance system</p> <p>Provide Enterprise Architecture review and technical assistance in data standards including terminology services</p> <p>Support VIE set up functioning health steering committee</p> <p>Support VIE develop data sharing and security related policies</p> <p>Support VIE in testing existing systems for interoperability via HL7 FHIR Connectathon</p> <p>Support VIE in identifying and developing local/grass root level ICT solutions via EpiHack event</p> <p>Support VIE in building capacity in HL7 standards including FHIR. Conduct a Connectathon with national disease reporting systems to establish programming interfaces for data exchange.</p> <p>Support VIE conduct assessment of facility service readiness for malaria</p> <p>Milestone: Draft data collection tool developed</p> <p>Support design of the VIE Malaria Management System</p> <p>Support VIE test new malaria reporting/investigation form through using a mobile application</p> <p>Milestone: Design of mobile app developed</p> <p>Develop digital health strategy guidance and digital health impact framework</p> <p>Milestone: Draft digital health strategy guidance and digital health impact framework includes an example of an investment case strategy for malaria services and an implementation guide.</p>

Legend: Activity completed; milestone reached; Cancelled due to change in partners' project timeline making the activity/milestone unfeasible

2015 and 2016	2017	Q1 and Q2 2018
<p>Increased use of quality data, information tools and technologies to improve malaria and other communicable disease information systems</p> <p>Brainstorming meeting with Esri in Redlands, California Release of the joint WHO-ADB policy brief on the geography of Universal Health Coverage (UHC) Official Launch of the AeHIN GIS Lab and first mission to Myanmar Release of the highly discounted Esri GIS software bundles Release of the HIS geo-enabling framework First mission to Cambodia</p>	<p>First mission to Viet Nam Finalization of the HIS geo-enabling pilot project in Myanmar Inclusion of HIS geo-enabling into the HMIS master plan (Cambodia) and strategic action plan for strengthening health information 2017–2021 (Myanmar) Common geo-registry workshop in Phnom Penh Meeting with Esri to ensure the sustainability of the software bundles for Ministries of Health in countries and release of AccessMod 5.0 Release of the common ge-registry guidance Conversion of the AeHIN GIS Lab into the HGLC</p>	<p>Finalization of the pilot project in Cambodia Finalization of the institutionalization process in Myanmar Launch of the HGLC Knowledge Repository Subnational level training on geospatial data and technologies in Cambodia and Myanmar Finalization of the pilot project in Viet Nam Proof of concept demonstrating that the HMIS/HCP platform in Cambodia can serve as common geo-registry Release of the new generation of Esri software bundles DHIS 2 as common geo-registry workshop co-organized with the University of Oslo</p>
<p>Legend: Activity completed; milestone reached</p>		
2015 and 2016	2017	Q1 2018
<p>Increased use of quality data, information tools and technologies to improve malaria and other communicable disease information systems</p> <p>Compilation and analysis of prevalence and incidence data for malaria and dengue analyzed Milestone: At least one country with prevalence and incidence data for malaria and dengue analyzed Conduct of trainings of application of GIS-based visualization Milestone: At least one country trained on application of GIS-based visualization</p>	<p>Conduct of trainings of application of GIS-based visualization Milestone: Six countries trained on application of GIS-based visualization Milestone: Analysis and mapping of malaria incidence data completed for three countries and dengue incidence data for two countries Development of GIS-based visualization system. System has been delivered to national programs in Cambodia and Myanmar with further development and training ongoing. Thailand already have their own system and discussions are ongoing about how this can best be complemented with support from ADB.</p>	<p>Milestone: At least one country with draft plan for GIS-based visualization system Development of policy recommendations for national programs on targeting malaria and dengue surveillance and control* Milestone: Policy recommendations for national programs on targeting malaria and dengue surveillance and control are drafted*</p>
<p>Legend: Activity completed; milestone reached</p>		

*Policy recommendations are being developed currently and will be finalized as population movement results are shared and discussed with MOH staff. Additional funding support has been secured by MORU to complete this work

OUTCOME 5: LABORATORY DIAGNOSTIC AND SURVEILLANCE

Improved capacity of laboratory diagnostics and surveillance system for malaria and other communicable diseases, including cross-border coordination

	2015 and 2016	2017	Q1 and Q2 2018
<p>Improved capacity of laboratory diagnostics and surveillance system for malaria and other communicable diseases, including cross-border coordination</p>	<p>Project documents of Additional Financing and Regional Capacity Development Technical Assistance (RCDTA) 8959 completed through consultation between ADB and the governments</p> <p>Additional Financing approved by ADB and signed by the governments.</p> <p>RCDTA8959 approved by ADB</p> <p>Additional financing made effective by ADB</p> <p>Selection and contracting of International nongovernment organizations (NGOs) completed (RCDTA8959).</p> <p>ADB inception missions fielded to Myanmar, Cambodia, the Lao PDR, and Viet Nam (RCDTA8959 and Additional Financing).</p> <p>Project implementation initiated, including contracting for procurement and consultants in each country (additional financing)</p>	<p>Roll out of the tested model of laboratory diagnostics and surveillance initiated, and MMP (RCDTA8959)</p> <p>Evaluation of the models developed (RCDTA8959)</p> <p>Procurement of goods completed. Distribution of goods and training activities in project sites initiated (RCDTA8959)</p> <p>Project implementation completed, including procurement and distribution of goods and training activities (additional financing)</p> <p>Milestone: National guidelines (malaria surveillance and diagnostic QA) and recommendations on MMP developed and endorsed (RCDTA8959)</p> <p>Milestone: Publication of the 100 SOP and manual for lab QA, 100 SOP on malaria microscopy, 100 algorithm on malaria microscopy and Access DMS and SOP on mobile used in malaria surveillance by SMS and Viber</p> <p>Milestone: Integration of the systems developed and lessons into the upcoming GMS Health Security Project (RCDTA 8959 and additional financing).</p>	<p>Milestone: Completion of goods distribution in project site in quarter (Q) 1.</p> <p>Completion of training for additional health workers and refresher courses for basic health station workers and village health volunteers in Q2.</p> <p>Regional lab QA workshop conducted in Myanmar and participated by GMS countries and various development partners</p> <p>Milestone: Development of National Malaria Control Programs (NCMP) scale-up plan</p> <p>Handover to NMCP and conduct of dissemination workshop</p> <p>Milestone: Development of scale-up plan for MMP completed with the ministry of health</p> <p>Milestone: Regional Malaria and MMP conference conducted in April 2018</p> <p>Submission of MMP and Malaria knowledge product</p> <p>Conduct of dissemination workshop on MMP intervention</p>

Legend: Activity completed; milestone reached

OUTCOME 6: PREVENTION

Increased capacity to address communicable diseases in infrastructure projects

	2015 and 2016	2017	Q1 and Q2 2018
<p>6.1 Increased capacity to apply health impact assessment (HIA) in infrastructure projects at country level</p>	<p>Establishment of HIA advisory team Country situational analysis and needs assessment Country consultations and national and provincial workshops for HIA guideline development Milestone: Draft country guidelines outline developed Country plans with budget on the development HIA in the Greater Mekong Subregion (GMS) countries National HIA coordinators recruitment to support country HIA development Milestone: Country consultations completed</p>	<p>HIA training for government, academe, and private sector staff HIA training integrated in ministry of health training programs Milestone: HIA training modules developed Selected GMS universities offer HIA course in graduate public health and environmental health programs HIA certificate course offerings in five GMS universities Milestone: HIA curriculum developed Development of HIA network to support continued development of HIA in the GMS Milestone: Terms of reference of the HIA network finalized Development of policy briefs and conduct of policy dialogues Milestone: Policy brief outline available HIA demonstration in five key sectors to gain good examples in HIA practice Milestone: Draft HIA report developed Development of national HIA guidelines Development of HIA framework for special economic zones (SEZs) in the GMS and specific guidelines for the Lao PDR and Thailand Milestone: Country consultations to finalize guidelines conducted</p>	<p>Discussed action plan with timeline for implementation of key aspects of HIA network Preparation of action plans for HIA teaching and research at regional and university level Milestone: Meeting with HIA network stakeholders conducted Country status overview on HIA for five GMS countries have been prepared Milestone: Draft report on country HIA overview reviewed Finalize editing of HIA framework for SEZs in the GMS Finalize publication and upload HIA framework in the ADB and GMS websites Milestone: Draft publication reviewed Prepare sectoral HIA guideline for thermal powerplant in Lao People's Democratic Republic (Lao PDR) Translation of sectoral guideline to both national language and English Milestone: Draft sectoral guideline reviewed Prepare reports on HIA demonstration or project case studies on HIA Milestone: Draft case studies discussed with government counterparts Bilateral consultation between the Lao PDR and Thailand on transboundary issues relating to SEZs development Milestone: Bilateral cooperation framework discussed with government counterparts</p>

Legend: Activity completed; milestone reached

	2015 and 2016	2017	Q1 and Q2 2018
<p>6.2 Increased capacity to apply HIA at ADB</p>	<p>Preliminary discussions with ADB management to adopt HIA in ADB-supported infrastructure projects</p> <p>Draft proposed changes to ADB's environmental and social impact assessment tool to incorporate malaria and other communicable disease threats</p> <p>Milestone: Internal consultations scheduled</p> <p>Inclusion of health in the existing rapid environment assessment</p> <p>Milestone: Updated checklist discussed with sector group</p> <p>Development of HIA training modules for training of ADB staff</p> <p>HIA training for ADB staff through existing training programs such as the standard poverty and social analysis training</p> <p>Milestone: Outline of HIA training modules discussed</p>	<p>Organize HIA demonstration in key sectors to provide evidence in HIA practice</p> <p>Development of HIA report with public health management plan</p> <p>Milestone: Draft HIA report discussed</p> <p>Development of HIA sourcebook to serve as guidance in HIA practice for ADB staff</p> <p>Incorporate to draft sourcebook good practice and other experiences from the HIA demonstration</p> <p>Milestone: Draft HIA sourcebook discussed</p> <p>Plan for additional HIA training for ADB staff including for resident mission staff in 2018</p> <p>Milestone: ADB funds for additional HIA training approved</p>	<p>Finalize editing of HIA sourcebook</p> <p>Finalize publication and upload HIA Sourcebook in the ADB and GMS websites</p> <p>Milestone: Draft publication reviewed by ADB management</p> <p>Finalize HIA E-learning materials for ADB K-Learn site including video and audio options</p> <p>Milestone: E-learning materials discussed with K-Learn team</p> <p>Conduct HIA introductory course for ADB staff</p> <p>Develop HIA training program for further ADB staff training</p> <p>Milestone: ADB budget discussed</p> <p>Presentation of HIA initiatives at the spring meeting of Multilateral Financial Institutions Working Group on Environmental and Social Safeguards</p> <p>Milestone: ADB safeguards staff agree on the presentation material</p>

Legend: Activity completed; milestone reached

Annex B: Glossary of Results-Based Framework Terms

Impact	Changes in conditions Millennium Development Goals (MDGs), health, social, economic, cultural, civil society, environmental, political.
	Positive and negative long-term effects on identifiable population groups produced by a development intervention, directly or indirectly, intended or unintended.
Outcome	Changes in capacity and performance of the primary duty-bearers Changes in behaviors and attitudes, social action, viability, institutional, policy formulation, decision-making, norms, knowledge, efficiency, competencies, opinions, standards. Achieved through the combination of RMTF investments.
	The changes in institutional performance or behavior among individuals or groups that occur between the completion of outputs and the achievement of goals.
Output	What implementers produce Goods and services, change in skills and capabilities, systems, evaluations, new products, reports, publications produced. Outputs are linked to project outputs.
	The changes in skills or abilities, or the availability of new products and services that result from the completion of activities within a development intervention.
Activities	What implementers do Develop curriculum, train, evaluate, recruit, procure, facilitate, develop action plans, work with media, etc.
	Actions taken or work performed through which inputs, such as funds, technical assistance and other types of resources are mobilized to produce specific outputs.
Inputs	What stakeholders invest in Human or financial resources, personnel, equipment, technology, time.
Milestone	Sets out how much of a target or what specific steps toward that target will be complete by specific dates.

References:

International Labour Office. 2011. *Applying Results-Based Management in the International Labour Organization, A Guidebook, Version 2*. Geneva.

United Nations Development Group. 2011. *Results-based Management Handbook*. New York.

Annex C: Gender Dimensions

CAMBODIA (reflects work under the Communicable Disease Control (CDC) 2 and CDC2-Additional Financing)

1. To enhance the opportunities and contribution of female staff in CDC systems and to improve gender analysis in regional CDC systems

Promote the increased training of women in CDC surveillance and response

Year	Total number of RRT/ CDC staff	Number of female RRT/ CDC staff	Number of trained staff	Number of trained female staff	Percentage of trained female staff
2015	1,328	383	978	318	83
2016	1,486	423	1,242	381	90
Q3 2017	1,569	448	1,373	412	92

RRT = rapid response team, CDC = communicable disease control

Source: Project Data Collection Form of each project province

Proactively target female laboratory staff for training

All (75/75) female laboratory staff from 12 provinces including Preah Vihear were trained on the use of new equipment and new rapid tests.

In Preah Vihear province, one refresher training on microscopy and clinical management was provided to 38 laboratory staff (nine are female).

Encourage and monitor the hiring of new female staff

There was an increase in the percentage of new female CDC/malaria staff, from 44% in 2012 to 54% in 2016.

Source: Project Data Collection Form of each project province 2011–2017

Collect specific sex-disaggregated data in all surveillance forms and reporting documentation

Data for the communicable disease surveillance system, including for Severe Acute Respiratory Infection, Influenza-like Illness and malaria, are all sex-disaggregated. Outbreak data, malaria supervision checklist, training and/or workshop, household survey and village demographic assessment results are sex-disaggregated, as appropriate.

Reach more women, including in the Greater Mekong Subregion (GMS) annual joint review of national malaria policies and strategies

National malaria strategic plan has been developed for 2016–2020. Interventions for women and children in the plan includes the provision of bed nets to women with children under 5 years of age, the provision of antenatal malaria screening for women at health center and village level, and trainings on the usage of long-lasting insecticidal nets for women.

Incorporate gender-related content into curriculum training modules, human resource development plans and cross-border activities

The Gender Mainstreaming Strategy and Action Plan 2014–2018 of Ministry of Health (MOH), Cambodia was developed for strengthening communicable and non-communicable services, and advocates for the inclusion of gender dimension in addressing these diseases. All seven CDC/malaria training curricula and IEC materials included gender contents. Health Workforce Development Plan 2016–2020 endorsed by MOH on 1 March 2016 included gender-related content.

2. To improve responsiveness of CDC to gender and ethnic issues in targeted districts or provinces and to increase the participation and awareness of women in CDC prevention in project locations

Collect, use, and analyze sex-disaggregated data in community-based CDC assessments and plans

Demographic assessments between 2013 and 2014 for 180 model healthy villages used and analyzed sex-disaggregated data. In 2014, the baseline survey collected sex-disaggregated data. Data collection forms with components for gender and indigenous people were developed and introduced to all provincial implementation agencies for completion. Institutional and training data from 2011 to 2017 are disaggregated by sex and ethnicity.

Proactively train women as village health volunteers and/or workers

A total of 2,925 out of 6,383 (46%) female health volunteers were trained since 2012.

Ensure that at least half of newly selected village health volunteers and/or workers in districts are female

Over the CDC2 and CDC2-Additional Financing (AF) project period, 11 project provinces have recruited 616 (47%) new female village health workers out of the 1,298 newly recruited village health workers.

Systematically include gender-specific issues into the training activities implemented by the project	There were two trainings on gender in Quarter (Q) 2 2017, one in Ratanakiri province with 47 participants (22 female), and one in Stung Treng province with 44 participants (23 female). In Q3 2017, two trainings on gender and/or indigenous people and on CDC were conducted, one in Preah Vihear province and the other in Mondulakiri province.
Integrate gender issues and targeted actions for women in joint action plans for malaria prevention and response in the border provinces	Joint action plan was developed in Q2 2017. Cross-border meeting with neighboring country of Preah Vihear was organized on 19–20 June 2017. Gender issues pertaining to joint action plan have not been identified.
3. To enhance the gender awareness and responsiveness of CDC project management	
Tailor the gender action plan to national and provincial contexts	Gender Action Plan 2012–2015 was developed and approved by MOH on 4 January 2013. This has been implemented at both central and provincial levels since 2012, and in Preah Vihear Province in Q4 2015.
Integrate gender-related activities and budget allocation in annual operational plans	In the 2017 annual operational plan, five targeted provinces allocated budget for gender activities.
Appoint gender representatives in program management unit or project implementing unit/SC	Provincial and national gender/indigenous people focal points have been validated, updated and trained in all 12 project provinces. There are currently 17 gender and indigenous people focal points and 7 of them are women.
Recruit a social development specialist to cover gender issues/gender action plan implementation	One social development expert and one national social development specialist were engaged in 2017.
Conduct gender sensitive and/or gender action plan training for project staff	All 139 (32 are female) project staff were trained on gender sensitivity and on the gender action plan. Training-of-trainers was conducted in 2013 by the MOH Gender Mainstreaming Action Group, and cascade trainings were conducted by provincial team for all IRT staff and other health staff with a total of 610 (235 females) participants between 2013 and 2015.
Include gender issues in project planning and management workshops	A checklist to ensure gender issues are incorporated in workshops and technical trainings has been developed and presented in the program management unit and project implementing unit training in May 2017.
Promote women's participation in project management	A total of 32 out of 139 (23%) program management unit and project implementing unit staff were females in the 11 project provinces. Source of data: List of government counterpart staff.

LAO PEOPLE'S DEMOCRATIC REPUBLIC (LAO PDR) (reflects work under the CDC2 and CDC2-AF)

1. To enhance the opportunities and contribution of female staff in CDC systems and to improve gender analysis in regional CDC systems

Promote the increased training of women in CDC surveillance and response
 110 out of the 134 (82%) female surveillance and response staff were trained. The 2017 Competency Report estimates that 87% of surveillance and response staff are highly competent.
 Among the CDC staff, 1,395 of the 1,741 (>80%) females have been trained.
 Source: Provincial Training and Gender Survey 2017

Proactively target female laboratory staff for training
 147 out of the 162 (91%) female laboratory staff were trained.
 Source: Provincial Training and Gender Survey 2017

Collect specific sex-disaggregated data in all surveillance forms and reporting documentation
 100% of surveillance and response data are sex-disaggregated.
 Source: Monthly reports on outbreaks and notifiable disease cases

Reach more women, including in the GMS annual joint review of national malaria policies and strategies

The project targeted actions to reach women and is included in the GMS annual joint review of national malaria policies and strategies. The National Strategy for Malaria Control and Elimination assesses risk and identifies targets and strategies. Young male forest workers are overwhelmingly the most at-risk group, although the report identifies MMPs (including women) and ethnic groups conducting slash-and-burn farming also to be potentially at-risk. Women are recognized to be important in family welfare and for ensuring the use of long-lasting insecticidal nets. The strategy is therefore to continue to emphasize and market bed nets to households, particularly through women and wives

Incorporate gender-related content into curriculum training modules, human resource development plans and cross-border activities

Gender contents are reflected in CDC training curricula at institution, model health villages, and community levels.
 Human resource development plans are gender responsive. (e.g. uses sex-disaggregated data, has quota for female staff to participate in trainings)
 Source: Provincial reports, workshop reports and plans

Encourage and monitor the hiring of new female staff

2014 – 261 of the 578 (45%) CDC staff are female
 2016 – 384 of the 622 (62%) CDC staff are female
 2016-2017 – 16 of the 23 (70%) new project management unit staff are female
 Source: Provincial Training and Gender Surveys 2014 and 2017

2. To improve responsiveness of CDC to gender issues in targeted districts/provinces and to increase the participation and awareness of women in CDC prevention in project locations

Collect, use, and analyze sex-disaggregated data in community-based CDC assessments and plans
 All project plans and assessments use sex-disaggregated data: e.g., project conducts focus groups for indigenous people research, household surveys, training reports, and outbreak and surveillance data
 Source: Training and Gender Surveys, Household Surveys, regular reporting on training and workshops and surveillance

Proactively train women as village health volunteers and workers

2,493 out of the 2,977 (84%) trained village health workers were female.
 Source: Provincial Training and Gender Survey 2017

Ensure that at least half of newly selected village health volunteers and workers in districts are female

453 out of 916 (50%) new village health workers were female (The project set up criteria that each village must have one male and one female village health worker).
 Source: Competency Survey 2017

Proactively outreach and target women in community-based CDC or malaria activities and campaigns using gender-sensitive IEC methods and materials

2014 Community Events – 257 out of the 646 (40%) participants were female.
 2014 Village Management Group Events – 157 out of the 342 (46%) participants were female.
 2017 Community Events 2,883 out of the 4,550 (63%) participants were female.
 2017 VMG Events – 1,986 of the 3,341 (59%) participants were female.
 Source: Provincial Training and Gender Surveys 2014 and 2017

Systematically include gender-specific issues into the training activities implemented by the project

All training activities are gender mainstreamed. Trainings and model health village training curricula include gender issues.
 Source: Reports from training undertaken

3. To enhance the gender awareness and responsiveness of CDC project management

Tailor the Gender Action Plan to national and provincial contexts

National gender action plan is under implementation and was revised in April 2013.
 Gender action plan, and design and monitoring framework progress are updated quarterly.
 Source: Gender actions and activities reported in provincial AOPs, Quarterly Reports

Integrate gender-related activities and budget allocation in annual operational plans	Annual operational plans include gender activities and budget allocation. Gender trainings were conducted at provincial, district, health center, and model health village levels. Source: AOP submitted to the project
Appoint gender representatives in program management unit and project implementing unit or SC	Quarterly reports include gender action plan and Indigenous People updates. All data (e.g. outbreaks and trainings) are sex-disaggregated. Source: Quarterly Reports have a standard gender and indigenous people section
Recruit a social development specialist to cover gender issues and gender action plan implementation	International gender specialist was recruited and mobilized in January 2012. Local specialist recruited and mobilized in November 2012. Source: Research and field studies undertaken and reports completed
Gender sensitive Gender Action Plan training for project staff	Service training - 2,451 staff trained (59% are female) Training management - 701 staff trained (41% are female) Gender action plan training - 690 staff trained (72% are female)
Include gender issues in project planning and management workshops	Gender is mainstreamed into all workshops. Gender is emphasized in provincial training activities. Source: Workshop reports
Promote women's participation in project management	2014 - 51 out of 98 (52%) project implementing unit staff were female 2017 - 41 out of 85 (48%) project implementing unit staff were female Source: Provincial Training and Gender Survey 2017

VIET NAM (reflects work under the CDC2 and CDC2-AF)

1. To enhance the opportunities and contribution of female staff in CDC systems and to improve gender analysis in regional CDC systems

Promote the increased training of women in CDC surveillance and response

In Q2 2017, 95 out of 221 (43 %) female staff of provincial project management unit (PPMU)s in Dak Nong and Binh Phuoc were trained. In 2016, 186 out of 222 (84 %) female staff of Dak Nong and Binh Phuoc PPMUs were trained. In 2015, 2,233 out of 4,332 (56 %) female staff of 20 PPMUs were trained.

Training topics: Strengthen staff capacity for surveillance, analysis and reporting of infectious diseases (Dengue fever, HFMD, etc.) at all levels

Data source: Provincial report

Proactively target female laboratory staff for training

In Q2 2017, 5 out of 8 (63 %) female staff of Dak Nong and Binh Phuoc PPMUs were trained.

In 2016, 7 out of 13 (54 %) female staff of Dak Nong and Binh Phuoc PPMUs were trained.

In 2015, 141 out of 565 (25 %) female staff of 20 PPMUs were trained.

Training topics: laboratory biosafety; manual operation of lab equipment; sampling, preservation, testing, and sample transporting techniques; use of enzyme-linked immunosorbent assay equipment for dengue testing; metal testing techniques for Arsenic, mercury, cadmium in food.

Data source: Provincial report

Collect specific sex-disaggregated data in all surveillance forms and reporting documentation

Data on cases/death are sex-disaggregated according to Circular No. 48/2010/TT-BYT that guides the declaration, information and reporting of communicable diseases. This circular was replaced by Circular 54/TT-BYT date 28 Dec 2015 that requires sex-disaggregated data. The eCDS (electronic reporting system for communicable diseases) also requires sex-disaggregated information and project processes are complying.

Data source: Provincial report

Incorporate gender-related content into curriculum training modules, human resource development plans and cross-border activities

100% PPMUs developed gender plan and is integrated in major activities such as trainings, workshops, and communications.

Data source: Provincial report

Encourage and monitor the hiring of new female staff

In 2015, 113 of the 216 (52.3%) newly hired staff were female.

In 2016, no new staff were recruited for Dak Nong and Binh Phuoc PPMUs.

In Q2, 2017: 1 of the 3 (33.3%) newly hired staff was female for Dak Nong PPMU. No new staff recruitment for Binh Phuoc PPMU.

Data source: Project Management Unit/Provincial Report

2. To improve responsiveness of CDC to gender/ethnic issues in targeted districts/province and to increase the participation and awareness of women in CDC prevention in project location

Collect, use and analyze sex-disaggregated data in community-based CDC assessments and plans

Some of the main community-based assessments have used and analyzed sex-disaggregated data including project surveys on worms and re-searches on CDC.

Data source: Provincial report

Proactively train women as village health volunteers/workers

Year	Total trained VHWs	Number of trained female VHWs	% of trained female VHWs	Note
2015	4,759	2,707	56.9	20 PPMUs
2016	236	191	80.9	Dak Nong and PPMU Binh Phuoc PPMUs
Q2 2017	228	192	84.2	Dak Nong and PPMU Binh Phuoc PPMUs

VHW = village health worker

Source: Provincial report/Results of researches

Ensure that at least half of newly selected village health volunteers/workers in districts are female	<p>In 2011, 48 out of 86 (55.8%) new village health workers were female.</p> <p>In 2012, 68 out of 123 (55.3%) new village health workers were female.</p> <p>In 2013, 87 out of 149 (58.4%) new village health workers were female.</p> <p>In 2014, 89 out of 146 (61%) new village health workers were female.</p> <p>In 2015, 65 out of 95 (68.4%) new village health workers were female.</p> <p>Accumulated figure = 357 out of 599 (59.6%) new village health were female.</p> <p>Data source: Provincial report</p>
Systematically include gender-specific issues into the training activities implemented by the project	<p>Under the project management unit's instructions, PPMUs integrated gender issues into trainings and workshops. The project conducted gender-specific training courses (process and implementation of local human resource development plans, gender awareness and implementation of gender - integrated activities).</p> <p>Gender issues are integrated in some aspects of CDC trainings with priority given to women of reproductive age in the target population. For example: vaccination (measles, rubella, tetanus, etc.), promotion of public communication on worm infection in the community, periodic deworming, etc.</p> <p>Data source: Provincial report</p>
3. To enhance the gender awareness and responsiveness of CDC project management Tailor the Gender Action Plan to national/provincial contexts	<p>Central Gender Action Plan was developed, introduced and partly implemented by PPMUs.</p> <p>Data source: PMU report</p>
All annual operational plans include gender-related activities and budget allocations	<p>Annual operational plans include gender and ethnic minority targets for 20 PPMUs.</p> <p>Data source: Project AOP</p>
Appoint gender representatives in program management unit and project implementing unit/SC	<p>Staff have been assigned to monitor and summarize project progress of project management unit and PPMU.</p> <p>Data source: PMU/PPMU reports</p>
Recruit a social development specialist to cover gender issues/Gender Action Plan implementation	<p>Two gender consultants were recruited and developed gender and ethnic minority plan.</p> <p>Data source: PMU report</p>
Conduct gender sensitive or Gender Action Plan training for project staff	<p>Conducted training-of-trainers on gender sensitivity and Gender Action Plan in June 2012 for 16 people. These trainers and a national specialist then cascaded trainings to 130 of 320 staff from project management unit, 20 PPMUs, 4 IHEs, 3 IMPEs (Institute of Malariaology, Parasitology and Entomology).</p> <p>In 2015, the project management unit conducted a training on gender, minority/gender action plan for 30 out of 277 project staff from project management unit and 20 PPMUs (including focal points for gender issues in 20 PPMUs). The focal point then organized training sessions for 210 staff at the local level.</p> <p>Data source: PMU/PPMU reports</p>
Conduct gender sensitive or Gender Action Plan training for project staff	<p>In 2011–2015, 29 out of the 47 (62%) project management unit staff were female, and 63 out of the 266 (24%) PPMU staff were female.</p> <p>In 2016–2017, 17 out of the 33 (26%) PPMU staff of Dak Nong and Binh Phuoc were female.</p> <p>Data source: PMU/PPMUs report</p>
Promote women's participation in project management	<p>In 2011–2015, 29 out of the 47 (62%) project management unit staff were female, and 63 out of the 266 (24%) PPMU staff were female.</p> <p>In 2016–2017, 17 out of the 33 (52%) project management unit staff were female, 5 out of the 19 (26%) PPMU staff of Dak Nong and Binh Phuoc were female.</p> <p>Data source: PMU/PPMUs report</p>

Annex D: Finance

**ASIAN DEVELOPMENT BANK
ADMINISTRATOR FOR
REGIONAL MALARIA AND OTHER COMMUNICABLE DISEASE THREATS TRUST FUND**

STATUS OF GRANT
AS OF 31 AUGUST 2018
(EXPRESSED IN US DOLLARS)

CONTRIBUTION RECEIVED:

Government of Australia (DFAT)	15,756,300
Government of UKNI (DFID)	12,414,880
Government of Canada (DFATD)	531,916

NET CONTRIBUTION AVAILABLE **28,703,096**

Investment Income 316,764

TOTAL AMOUNT AVAILABLE **29,019,860**

AMOUNT UTILIZED FOR:

Outcome 1: Leadership	(2,345,103)	
Outcome 2: Financing	(277,133)	
Outcome 3: Medicines	(3,116,152)	
Outcome 4: Information Systems	(3,488,056)	
Outcome 5: Laboratory Diagnostic and Surveillance	(13,415,950)	
Outcome 6: Promotion and Prevention	(3,387,604)	
Direct Charges	(858,464)	
Administrative Costs, Audit, Financial Costs	(1,445,695)	(28,334,157)

UNUTILIZED BALANCE **685,703^{1/}**

1/ Unutilized Balance	685,703
Less: DFATD/Canada Contribution	(531,916)
DFATD/Canada Investment Income	(5,870)
DFID/DFAT Unutilized Balance	147,917

Annex E: RMTF Recommendations for Management of Future Trust Funds

- Background research is essential to ensure efforts are aligned with government needs and that they take into account the prevailing environment in terms of private sector and other agency involvement.
- Meeting donor reporting requirements is a key part of successful fund management, and it is useful to have donor involvement at the beginning, preferably at the country fact-finding mission stage, so that data collection can be organized in a way that meets donor requirements. For the same reason, it is also important to involve an evaluation and monitoring expert from the outset.
- Delays due to constraints on counterparts should be anticipated and built into project design so that projects can evolve as circumstances change.
- Local counterpart and government champions can expedite projects and greatly increase their chance of success.
- International and locally based consultants have complementary skills and both are needed to achieve sustainable results.
- When working at the grassroots level, people and civil society organizations can be trusted to know the needs of local community, and are often the best placed to get results from interventions if they are genuinely involved from the planning stage onwards and empowered to take charge of projects.
- Innovation entails risk, and it should be expected that a proportion of projects will fail. Lessons should be shared.
- Close collaboration with development partners is important to avoid duplication, silos, and unsustainable results.
- It is common for some of the funds to be returned when a project ends, and this does not necessarily signal project failure. Sometimes activities are less expensive than anticipated.

Regional Malaria and Other Communicable Disease Threats Trust Fund

Final Report

This report details the key achievements of the Regional Malaria and Other Communicable Disease Threats Trust Fund from its creation in 2013 to the first half of 2018. It provides detailed analysis of the results by outcome, profiles specific projects that serve as exemplars of the fund's impact, and offers insights into how similar trust funds can be managed for success in future.

About the Asian Development Bank

ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty. Established in 1966, it is owned by 67 members—48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

