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Domestic financing for HIV, TB and malaria in Global Fund High Impact Asia countries

Ann Ithibu & Djesika Amendah

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Preface

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- Global Fund investments in adolescents and youth in Eastern and Southern Africa for the years 2018-2021
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Executive summary

The Global Fund to fight AIDS, Tuberculosis (TB) and malaria is a major financier of these three diseases globally. Since its inception in 2002, it has invested more than $41 billion in more than 100 countries. The Global Fund invests the majority of its funds in countries it calls “High Impact countries”. Currently, 24 countries are classified as high impact: 13 countries in sub-Saharan Africa and nine in Asia. The high impact Asia countries, which are the subject of this report, are Bangladesh, Cambodia, India, Indonesia, Myanmar, Pakistan, the Philippines, Thailand and Viet Nam. The countries have a huge burden of either one, two or all the three diseases.

Limited information exists on how much the individual high impact Asia countries spend on health, particularly on the three diseases. We sought to fill this gap in knowledge; we assessed domestic health financing for the year 2016, and trends in domestic financing for HIV, TB and malaria for the years 2015-2017 and 2018-2020 which correspond to Global Fund’s grant implementation periods, for the nine high impact Asia countries.

Most of the high impact Asia countries spent less than 10% of their total government expenditure on health in 2016, the most recent year for which data are available, except for Thailand – the only upper-middle income (UMI) country in the sample – which spent 15.3%. The high impact Asia countries relied on private sources of funding such as out-of-pocket payments (OOPs) – as compared to domestic public and external resources – to finance the health sector in 2016. In fact, private spending dominated in eight of the nine countries (Thailand was the exception here as well) as private sources paid for more than half of the current health expenditures.

In the 2015-2017 implementation period, domestic resources accounted for 60% of the $4 billion raised by the high impact Asia countries – where data was available – for the three diseases: HIV, TB and malaria. The Global Fund and other external sources accounted for 28% and 13% respectively (percentages do not add up to 100% due to rounding). Domestic contributions were highest for HIV (64%), followed by TB (55%) and malaria (46%).

Domestic contributions varied widely across the countries for the three diseases. Some countries fund more than others. For instance, Thailand and the Philippines funded most of the HIV response through domestic resources: 90% and 79% respectively, whereas Cambodia and Viet Nam funded less than a third – 23% and 29% respectively – in the same time period.

The sampled countries require $5 billion, $5.3 billion and $1.6 billion to fully fund the HIV, TB and malaria strategic plans, respectively, during the 2018-2020 implementation period. The countries collectively had raised $3.9 billion for HIV, $2.7 billion for TB and $617 million for malaria, creating a funding gap of 23% (HIV), 49% (TB) and 61% (malaria).

This analysis suggests that countries with a stronger economy are more likely to invest more of their domestic resources on health. Indeed, available literature found that economic growth and fiscal expansion increase public spending on health, particularly in middle-income countries.

The countries can increase the available domestic resources by increasing revenue collection, increasing budgetary allocations to the health sector (from low-priority expenditures) and obtaining debt relief (which frees up additional resources for allocation to the health sector). These are often difficult political processes. In addition, increments in domestic investments in some countries may still not be enough to fully support the three disease programs and the health sector in general.

Introduction

The Global Fund to fight AIDS, Tuberculosis (TB) and malaria is a major financier of these three diseases globally. Since its inception in 2002, the Global Fund has invested more than $41 billion in more than 100 countries. The Global Fund invests the majority of its funds in countries it calls "High Impact countries". Currently, 24 countries are classified as high impact: 13 countries in sub-Saharan Africa and nine in Asia.[1] The Global Fund has also classified one regional grant in Asia as high impact: the Regional Artemisinin-Resistance Initiative 2: Elimination (RAI2E) which was first started in 2013 and is in its second phase of implementation, in response to the emergence of drug-resistant malaria in countries in the Greater Mekong region: Cambodia, Myanmar, Thailand, Viet Nam, Lao People's Democratic Republic (PDR) and the Yunnan Province of China. Among those countries and province, the first four are high impact.

The high impact countries are critical to the Global Fund success due to their high burden of the three diseases and the potential impact of the Global Fund investments. High Impact countries account for 70% of the global burden of HIV, TB and malaria and would receive 71% of the $10 billion raised by the Global Fund for the current 2017-2019 allocation period. High impact Africa receives about three quarter of this allocation for high impact countries ($5.6 billion, 76%). The remaining goes to high impact Asia ($1.7 billion, 24%).

The high impact Asia countries, which are the subject of this report, are **Bangladesh, Cambodia, India, Indonesia, Myanmar, Pakistan, the Philippines, Thailand** and **Viet Nam.**[1] The Global Fund financing for the current 2017-2019 allocation period (which corresponds to the 2018-2020 implementation period) covers the three disease components in all the nine countries. However, only five countries – Bangladesh, India, Indonesia, Pakistan and the Philippines- have country-specific malaria grants, with the remaining countries receiving funding for malaria through the regional grant RAI2E.[2]

Epidemiology of the three diseases in the high impact Asia countries

The averages of prevalence and incidence of the three diseases in the high impact Asia countries are hard to find as these countries do not constitute a political or economic entity by themselves; they are part of wider regions Even the classification of countries in different Asia and Pacific sub-regions depends on the agency: the Joint United Nations Programme on HIV/AIDS (UNAIDS), World Health Organization (WHO), the World Bank each uses different sub-regional classification/groupings for countries (Appendix 1). For this study, we will use the epidemiology information of the wider Asia and Pacific region and sub-regional classification and their source for financing analyses.

Countries in the Asia and Pacific region differ in terms of demographics, geography, linguistics, religion and political structures.[3] [4] But these countries face common health challenges including emerging and widespread infectious diseases, a growing epidemic of non-communicable diseases, and weak health systems evidenced by a shortage of adequate human resources for example.

The Asia and Pacific region, which include the high impact Asia countries, is home to more than 5.2 million people living with HIV, according to the UNAIDS. The region accounted for the highest proportion (14%) of total new HIV infections outside the African region in 2017. New infections decreased by 14% on average between 2010 and 2017, but this average conceals wide disparities as the proportion of new infections increased in some countries over these years. A reduction in new infections occurred in Cambodia (63%), Myanmar (29%) and India (27%). In contrast, new HIV infections increased by 174% in the Philippines and 45% in Pakistan between 2010 and 2017. This rise occurred especially among men who have sex with men (MSM), and adolescents and young people.[5]

TB is also a major health problem in the Asia and Pacific region particularly in the South-East Asia sub-region. South-East Asia reported 226 new TB cases and 32 TB-related deaths per 100,000

population in 2017– about 70% above the global average of 133 new cases and 17 TB deaths per 100,000 population, according to WHO. In contrast, the Western Pacific region reported only 94 new cases and 4.9 deaths per 100,000 population. However, the Philippines and Cambodia, both high impact countries in the Western Pacific region reported TB incidence as high as 554 and 326 new cases per 100,000 population. The TB treatment coverage is also notably low in the South-East Asia region (64%) – compared with the global average – while that of the Western Pacific region was 75%.

Although malaria remains endemic in most of the countries in the Asia and Pacific region, including in the high impact countries, malaria incidence and related deaths have decreased significantly in recent years. In fact, the Maldives and Sri Lanka have already eliminated malaria.[6] More countries are working towards elimination. But billions of people are still at risk and some countries reported an increase in the number of new malaria cases in 2017I in Cambodia, for instance, new malaria cases increased by 98% between 2016 and 2017.

Resistance to artemisinin, the key chemical compound in the best available anti-malarial medications, threatens to undermine the gains made so far in malaria control.[7] Artemisinin resistance was first reported in 2008 and affects the six countries in the Greater Mekong region.

Health financing in the high impact Asia countries

Countries in the Asia and Pacific region are either middle- or high-income countries, as classified by the World Bank (Appendix 2). However, public investments in the health sector remain low in most of these countries. Low- and middle-income countries in East Asia and Pacific, as classified by the World Bank (see Appendix 1), spent on average 9% of the total government expenditure on health in 2016, according to the World Bank.[8] This contribution accounted for 58% of the national health expenditures.[8] However, in South Asia, domestic public contributions accounted for on average less than a third (26%) of the total expenditures in the same year.[8]

As a result of low government spending on health, out-of-pocket payments (OOPs) by the households at the point of health service delivery are an important source of health financing in the region. For instance, South Asia obtained on average 64% of their national health expenditures from OOPs in 2016.[8] Low- and middle-income countries in the East Asia and Pacific region obtained on average 36% of health expenditures from OOPs in 2016. Both these proportions are higher than the limit of 20% recommended by WHO.[9]

Countries in the Asia and Pacific region also receive health sector funding from development partners. However, this external funding to the region is likely to decrease further as the economies of these countries to grow. For instance, external resources for HIV to the Asia and Pacific region decreased by 30% between 2006 and 2017.[5] Country national TB programs also reported aslight 18% decline– from $1.1 billion to $0.9 billion - in international funding between 2017 and 2018.[10]

Existing health financing numbers reflect global or regional averages which can conceal large discrepancies. Thus, it is important to analyse individual country contributions towards HIV, TB and malaria by the various sources, especially in countries with a high burden of either one of the three diseases.

This report contributes to filling the gap in the knowledge of government health spending in high impact countries in the Asia and Pacific region, particularly for the three diseases: HIV, TB and malaria. Specifically, the report assesses domestic contributions to the health sector and to HIV, TB and malaria in nine high impact Asia countries for the 2015-2017 and 2018-2020 Global Fund grants implementation periods.

Methods

Study period

This study covers the nine high impact Asia countries and covers different years/periods:

- A single year 2016 for the general health sector financing – 2016 is the latest year for which the data are available
- Two periods of three years for HIV, TB and malaria financing: 2015-2017 and 2018-2020. These years are grant implementation periods for the majority of the sampled countries (**Table 1**) Note that the Global Fund also has a three-year allocation period which is slightly different from the implementation period. The corresponding allocation periods are 2014-2016 and 2017-2019

Table 1: Participating countries and their previous and current grant implementation period

	2015-2017 implementation period				2018-2020 implementation period		
Countries	2014	2015	2016	2017	2018	2019	2020
Bangladesh, Cambodia, India, Indonesia, Myanmar, Pakistan[a], the Philippines, Thailand and Viet Nam.							
India, Pakistan[b]							

Note:
India and Pakistan implementation periods run from 2014-2016 and 2017-2020
[a] Pakistan HIV/TB grant
[b] Pakistan malaria grant

Data sources

We used information from several sources:

a. **Databases**:

- WHO Global Health Expenditure Database (http://apps.who.int/nha/database)
- The World Bank Data Bank (https://data.worldbank.org/)
- Global Fund Data Explorer (https://data.theglobalfund.org/home)

b. **Desk review**:

- Grant application documents submitted by countries to the Global Fund: The primary source of financing data for the three diseases was the funding landscapes which is part of the funding request and is based on country self-reported estimates of funding. The funding landscape reports total funding needed to address the overall response for each disease; disease-specific previous funding (in our case the 2015-2017 implementation period), and current and anticipated funding (2018-2020 implementation period) from domestic and external resources; and the remaining financial gap. Funding landscapes information was available for eight of the nine countries, except for Myanmar and the malaria funding landscape for the Philippines.
- Reports by technical partners such as the WHO and UNAIDS
- Other previous relevant studies.

Analysis

We analysed several indicators:

a. **Domestic general government health expenditure (GGHE-D) as a percentage of general government expenditure (GGE) (%):** This is a measure of the public expenditure on health from domestic sources as a share of total public expenditure. It indicates the priority of the government to spend on health from own domestic public resources. Domestic sources include revenue as internal transfers and grants, subsidies to voluntary health insurance beneficiaries, non-profit institutions serving households (NPISH) or enterprise financing schemes as well as compulsory prepayment and social health insurance contributions.[11]

b. **Domestic general government health expenditure (GGHE-D) as a percentage of gross domestic product (GDP):** This is the share of current domestic general government resources spent on health in the economy proxied by the GDP.[12] This indicator measures the fiscal space for health even though not all of it is under the control of the State.[11]

c. **Financing sources as a percentage of the current health expenditure (CHE)**: domestic resources including public and private resources from households and external resources finance current health expenditures. The analysis assesses contributions of the different sources as proportions of the current health expenditure (CHE).

- ***Domestic general government health expenditure as % of CHE***: The share of current health expenditures funded from domestic public sources for health. It indicates how much resources the public sector has dedicated to health.[13] Domestic public sources are as described in a. above. They do not include external resources spent by governments on health.

- ***External health expenditure as % of CHE:*** The share of current health expenditures funded from external sources. These are composed of direct foreign transfers and foreign transfers distributed by government encompassing all financial inflows into the national health system from outside the country.[12] External sources either flow through government schemes or are channelled through non-governmental organizations or other schemes.

- ***Domestic private health expenditure as % of CHE:*** The share of current health expenditures funded domestically by the private sector. Private sector funds come from households, corporations and non-profit organizations. Such expenditures can either be prepaid to voluntary health insurance or paid directly to healthcare providers (out-of-pocket payments). This indicator describes the role of the private sector in funding healthcare relative to public or external sources.[14]

- ***Out-of-pocket expenditure as % of CHE***: The share of current health expenditure funded from out-of-pocket payments by households. Out-of-pocket expenditure refers to spending on health at the point of service and at the time of need by households. Out-of-pocket expenditure is a sub-set of the domestic private health expenditure**.**

- ***Voluntary health insurance as % of CHE:*** The share of current health expenditures funded through private prepaid contributions to voluntary health insurance mainly through households and corporations.[15] The indicator excludes any government or external subsidies.

d. Domestic general government health expenditure (GGHE-D) as a percentage of gross domestic product (GDP): Governments should spend at least 5% of GDP on health if they are to progress towards universal health coverage (UHC).[9] Researchers argue that this target is the most appropriate one because it factors in affordability within a specific country context – the health expenditure is expressed relative to the country's level of economic activity. The indicator places

more emphasis on increased fiscal space rather than shifting existing resources from other social services to the health sector.

When appropriate, we compared our findings with health expenditure benchmarks. We used the United States Dollar (USD) as the main currency in this report.

Findings

Key country characteristics

The nine high impact Asia countries vary in population size, economic status, HIV, TB and malaria epidemiological profiles, and Global Fund investments (Table 2).

India is by far the most populous of the nine countries with a population of more than 1.3 billion people. Indonesia is the second most populous country (264 million) followed by Pakistan (197 million). Cambodia has the lowest population (16 million).

Thailand, the only upper middle-income (UMI) country in these high impact Asia countries, has the highest Gross Domestic Product (GDP) per capita ($6,595). The remaining eight are lower middle-income (LMI) countries; their GDP per capita ranges from $1,256 in Myanmar to $3,846 in Indonesia. There is no low-income (LI) country among the sampled countries.

HIV prevalence is generally low in the nine countries. The prevalence ranged from less than 0.1% in Bangladesh to 1.1% in Thailand in 2017. HIV is mainly concentrated among the key populations in high impact Asia countries. In fact, in 2017, 84% of all new HIV infections in the Asia and Pacific and the Caribbean were among the key populations and their sexual partners.[5] (This percentage is much higher than the global average of 47% of all new HIV infections.)

All the nine countries are among the 30 high burden TB countries as classified by the World Health Organization (WHO). TB incidence for eight of the nine countries – excluding Viet Nam - was higher than the global average (133 per 100 000 population) in 2017. The Philippines reported the highest incidence (554) while Viet Nam had the lowest (129).

Two countries – India and Pakistan – are high burden for malaria. All the remaining countries are endemic for malaria, and four of these countries – found within the Greater Mekong region - have reported resistance to artemisinin: Cambodia, Myanmar, Thailand and Viet Nam.[6]

The nine countries have received more than US$6.3 billion from the Global Fund since 2002. India has been the biggest beneficiary of these funds – the country received a third of these Global Fund investments ($2.1 billion). The second largest recipient is Indonesia ($871 million) followed by Myanmar ($608 million). Viet Nam and the Philippines have received the least amount of funding in this sample: $414 million and $413 million, respectively.

Table 2: Key country characteristics for the nine High Impact Asia countries

Country	Population (2017)	GDP per capita (current US$) (2017)	HIV prevalence (Adult) (%) (2017)	TB high burden country[1]	TB incidence (per 100 000 population) (2017)	Global Fund investments (US$) (Accessed 10 April 2019)
Lower-middle income (LMI) countries						
Bangladesh	164,669,751	1517	<0.1	Yes (TB & MDR-TB)	221	510,287,504

Cambodia	16,005,373	1384	0.5	Yes (TB)	326	482,322,553
India	1,339,180,127	1942	0.2	Yes (All three lists)	204	2,123,465,292
Indonesia	263,991,379	3847	0.4	Yes (All three lists)	319	870,690,033
Myanmar	53,370,609	1257	0.7	Yes (All three lists)	358	607,661,679
Pakistan	197,015,955	1548	0.1	Yes (TB & MDR-TB)	267	525,354,843
Philippines	104,918,090	2989	0.1	Yes (TB & MDR-TB)	554	412,822,672
Viet Nam	95,540,800	2342	0.3	Yes (TB & MDR-TB)	129	414,129,272
Upper-middle income country						
Thailand	69,037,513	6595	1.1	Yes (All three lists)	156	484,844,879

Note: [1] There are three high burden lists by the World Health Organization: for TB, TB/HIV and multi-drug resistant TB (MDR-TB)

Is the health sector a priority for the nine high impact Asia countries?

Less than a tenth of the domestic general government expenditure is spent on health

The proportion of the general government expenditure allocated to health reflects the level of priority awarded to the health sector by the government.

Thailand was the only country that spent more than 10% of the general government expenditure on health (15.3%) in 2016, the most recent year for which data are available. The health expenditure as a percentage of the general government expenditure for the remaining eight countries ranged from 3.4%% in Bangladesh to 9% in Viet Nam.

Figure 1: Domestic general government health expenditure as a percentage of general government expenditure for the nine sampled countries in 2016

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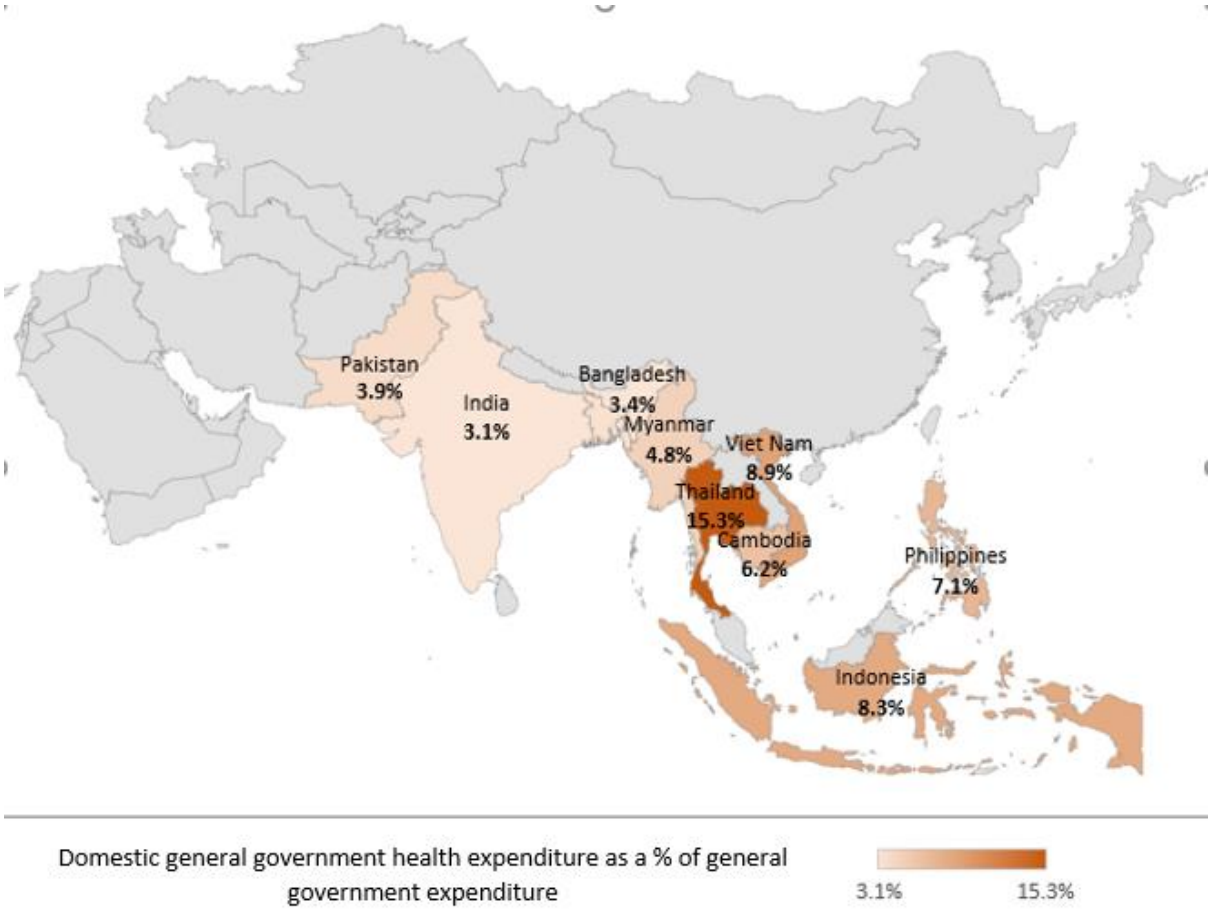

Chart prepared by author

In another measure of the country's level of priority, domestic general government expenditure on health as a proportion of the GDP, none of the sampled countries came close to reaching the recommended domestic spending of 5% of the GDP. Thailand was the closest at 2.9%, followed by Viet Nam (2.68%). The proportion was lowest in Bangladesh (0.42%).

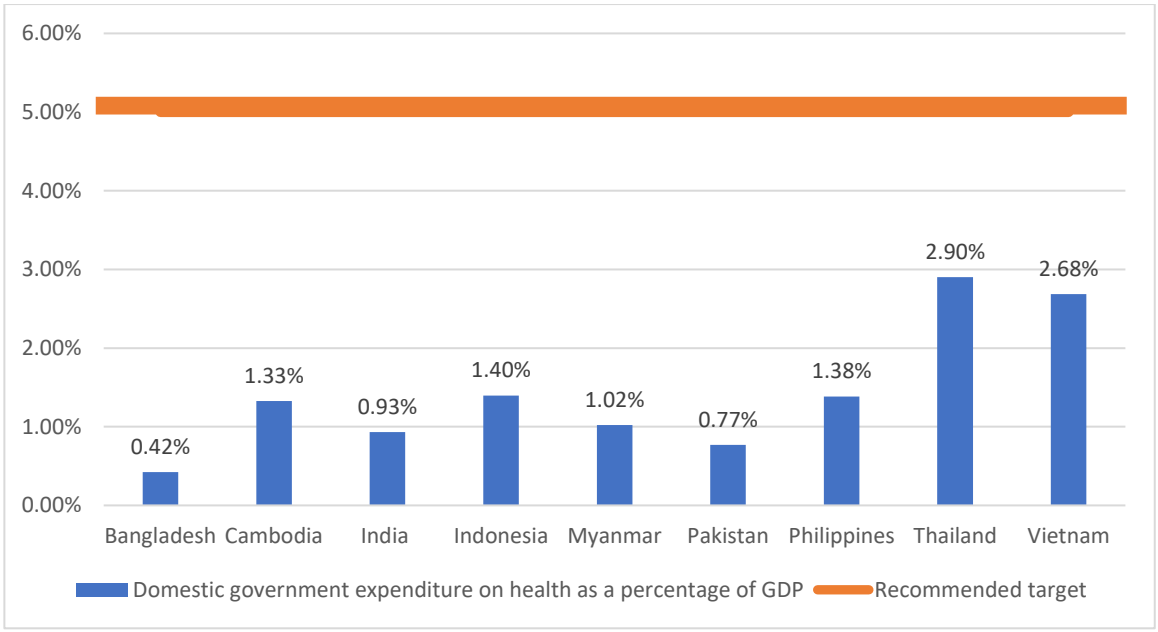

Figure 2: Domestic general government health expenditure as a percentage of GDP (2016)

Health care is heavily reliant on private funding

Most of these countries rely heavily on private funds to finance the health sector – as compared to domestic public and external sources. In 2016, private spending dominated in eight of the nine countries – Thailand was the exception - as private sources paid for more than half of the current health expenditures (Figure 3). Private spending in the eight countries ranged from 50% in Viet Nam to 74% in Bangladesh, India and Myanmar. Only 22% of Thailand's national health expenditures came from private spending. In comparison, low- and middle-income countries in East Asia and Pacific, as classified by the World Bank, obtained on average 43% of their national health expenditures from private sources in the same year. Whereas, countries in South Asia obtained more than a third (72%) of their health expenditures from private sources in the same year.[16]

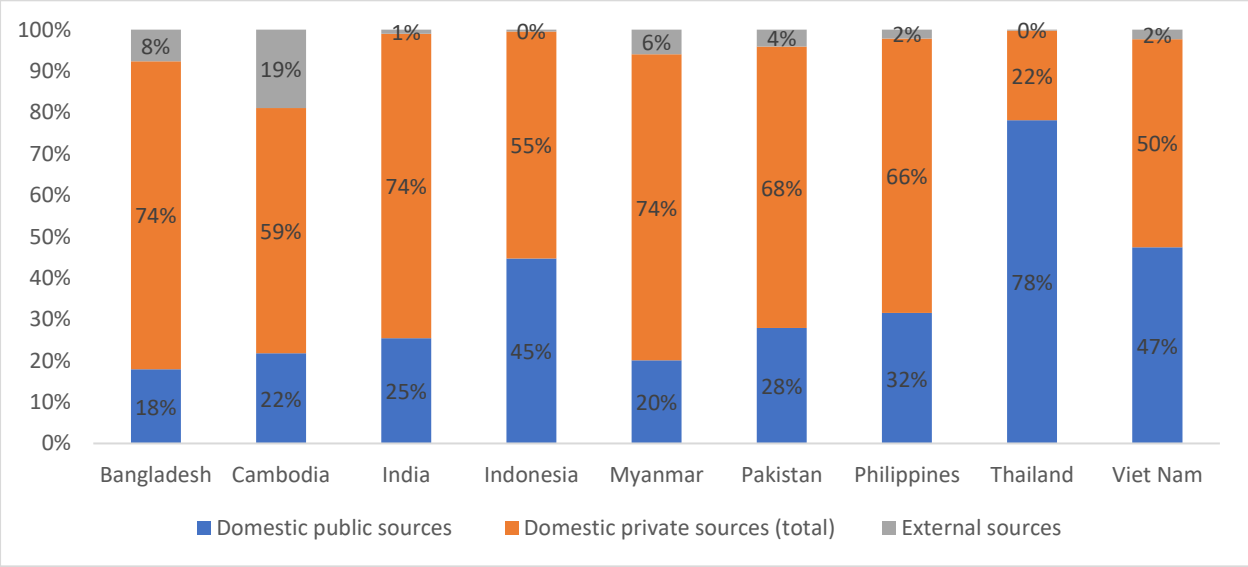

Figure 3: Current Health Expenditure (CHE) by source (2016)

Private spending is mainly financed via voluntary health insurance - such as through the employer – and out-of-pocket payments (OOPs) (direct payments made by an individual to health care providers

at the time of service use). Among the nine countries, OOPs dominate private spending. In fact, OOPs are the sole source of private health expenditures in Myanmar (Figure 4). In other countries – Bangladesh, Cambodia, Pakistan and Viet Nam – private expenditures are almost entirely funded through the OOPs. In contrast, OOPs account for a lesser proportion of the private expenditures in Indonesia and Thailand. OOPs act as a barrier to access to health services and are often associated with catastrophic and impoverishing spending.[17] [18]

Voluntary health insurance (VHI) contributes a significant amount of domestic private funds in the Philippines (11% of the CHE) and Thailand (7%).

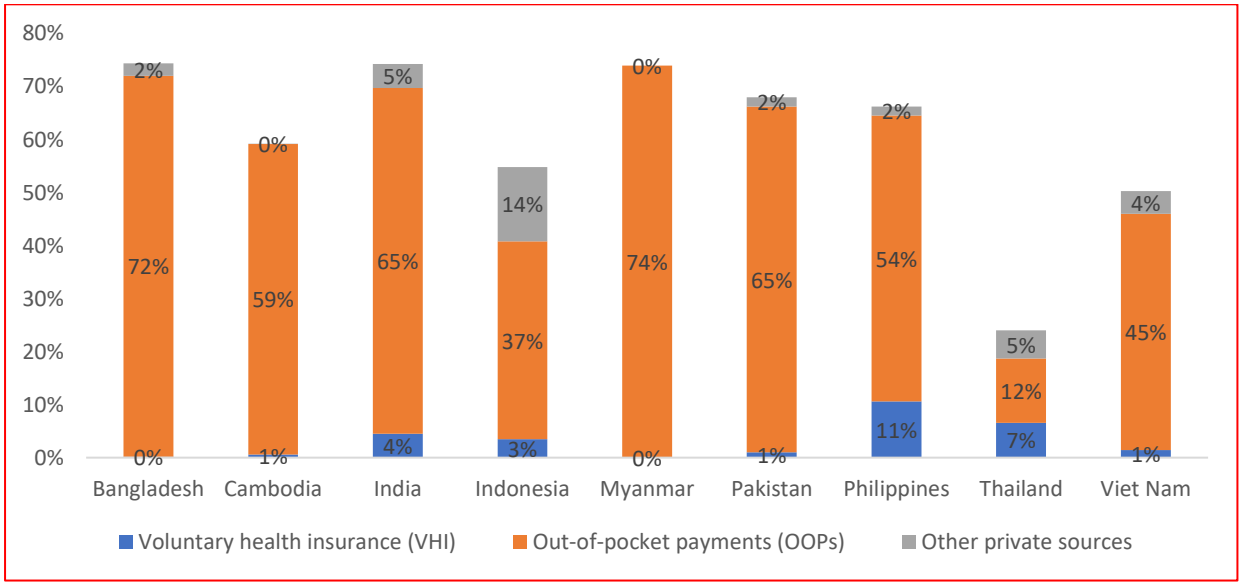

Figure 4: Breakdown of private spending by source: voluntary health insurance, out-of-pocket payments and other private health expenditures (as percentages of the current health expenditures (CHE))

Note: The breakdown does not add up to the percentage of domestic private sources (total) depicted in Figure 3 for Cambodia and Indonesia due to rounding and Thailand for which the dataset does not explain the variance.

Domestic public sources played a less significant role in funding the national health expenditures relative to private contributions in eight of the nine countries except for Thailand where public spending accounted for 78% of the national health expenditures. The share of the public sources ranged from 15% in Bangladesh to 47% in Viet Nam.

External resources were the least contributors to the national health expenditures in 2016. In fact, Indonesia and Thailand financed less than 0.5% of their national health expenditures using external resources. Contributions by the external resources were equally low in India (1%), Philippines (2%) and Viet Nam (2%). Financing from the external resources was highest in Cambodia (19%) followed by Bangladesh (8%). In 2017, the main donors to the region were International Development Association (IDA) - which is part of the World Bank Group-, the United States, Global Fund, European Union institutions and Germany (listed according to the absolute value of their contributions starting with the highest).[19]

Financing of HIV, TB and malaria programs in eight countries in the 2015-2017 implementation period

Domestic resources funded more than half of the expenditures for the three diseases

The High Impact Asia countries raised almost $4 billion for HIV, TB and malaria programs from domestic sources, the Global Fund and other external resources during the 2015-2017 Global Fund implementation period (Table 3). Total available funding amounted to $2.4 billion for HIV (as reported by eight countries, excluding Myanmar whose funding requests were unavailable), $1.1 billion for TB (seven countries excluding Bangladesh and Myanmar) and $453 million for malaria (four countries: Bangladesh, India, Indonesia and Pakistan) (Table 3, row totals).

Domestic resources accounted for 60% of the total available funds for the three diseases, whereas the Global Fund and other external resources accounted for 28% and 13% respectively (percentages do not add up 100% due to rounding). Domestic resources contributed more than half of the available resources for HIV (64%) and TB (55%). Among four of the five countries with country-specific malaria grants and for which data was available, the Global Fund accounted for 53% of the total available resources for malaria.

Table 3: Available funds in the 2015-2017 implementation period for the High Impact Asia countries by source

	HIV (n=8)	TB (n=7)	Malaria(n=4)	Total
Total domestic resources ($)	1,537,399,275 (64%)	620,680,592 (55%)	208,616,306 (46%)	2,366,696,173 (60%)
Total Global Fund resources ($)	475,423,167 (20%)	385,043,181 (34%)	240,282,693 (53%)	1,100,749,041 (28%)
Other external resources ($)	376,135,898 (16%)	119,359,716 (11%)	4,527,426 (1%)	500,023,040 (13%)
Total	2,388,958,340 (100%)	1,125,083,489 (100%)	453,426,425 (100%)	3,967,468,255 (100%)

Note:

1. Countries:
   HIV: Bangladesh, Cambodia, India, Indonesia, Pakistan, Philippines, Thailand and Viet Nam (funding request for Myanmar was unavailable)
   TB: Cambodia, India, Indonesia, Pakistan, Philippines, Thailand and Viet Nam (TB funding data unavailable in the funding request for Bangladesh; and funding request for Myanmar was unavailable)
   Malaria: Bangladesh, India, Indonesia and Pakistan (Four other countries - Cambodia, Myanmar, Thailand and Viet Nam - received funding through the RAI; the funding request for the Philippines was unavailable)
2. Global Fund grants from the 2015-2017 implementation period (excludes amounts included in the 2018-2020 funding request)
3. Percentages represent column percentages (not row) i.e. the percentages are calculated from the column totals
4. The total column percentages do not add up to 100% because of rounding

HIV and TB are mainly funded from domestic resources

Domestic resources were the highest source of funding for HIV programs in the eight countries in the 2015-2017 implementation period. Domestic contributions were particularly high in Thailand (90%) and the Philippines (79%), but less than a quarter of the total available resources in Cambodia (23%) (Figure 5.

Global Fund contribution as a proportion of the total available resources was as low as 5% in Thailand and as high as 53% in Bangladesh in the same implementation period. Data on the Global Fund

contributions for Pakistan for the 2015-2017 implementation period was missing from the funding landscape (which is part of the funding request submitted by the country to the Global Fund).

About half (51%) of the available resources in Viet Nam came from external sources, excluding the Global Fund. External resources played a less significant role in the remaining six countries and accounted for between 5% in Thailand and 43% in Cambodia. Note that Pakistan's proportion of external resources was the highest at 55%; however, we cannot compare this proportion to that of other countries because the Pakistan did not report funding from the Global Fund for the 2015-2017 implementation period.

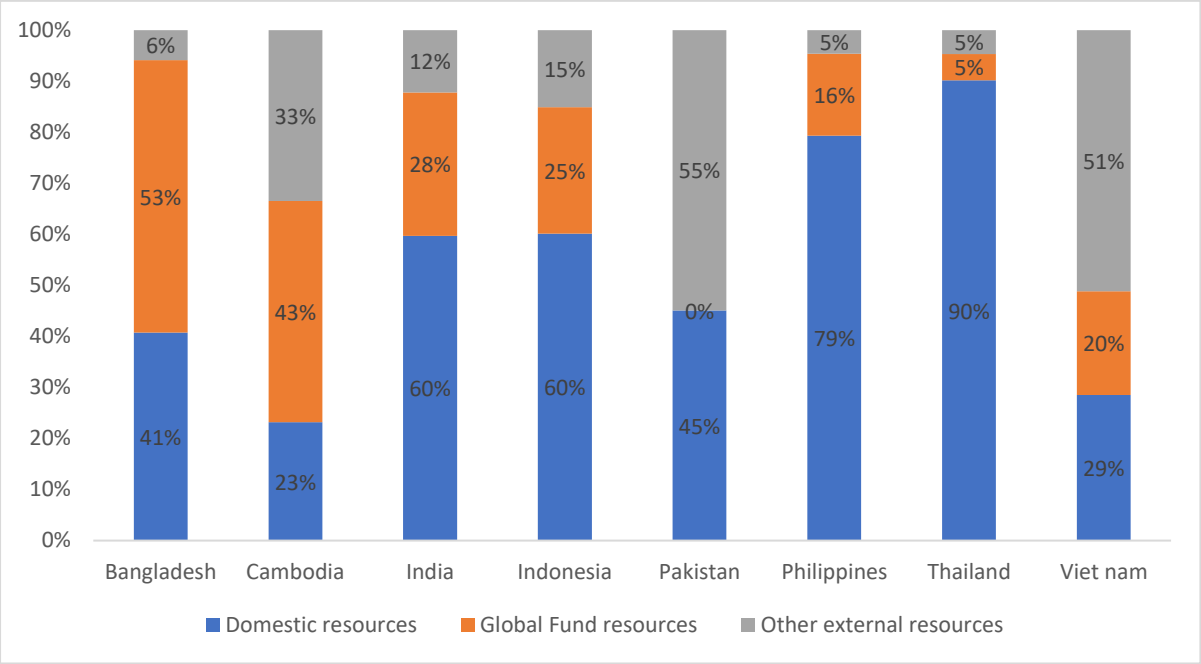

Figure 5: Percentage of HIV funding by source for the 2015-2017 implementation period

Note: Pakistan did not report Global Fund spending for the 2015-2017 implementation period

Similarly, domestic resources were the main source of financing for TB programs. Specifically, domestic contributions accounted for more than half of the total available funding for TB in four of the six countries: Thailand (88%), Viet Nam (58%), India (56%), Indonesia (55%) (Figure 6). Domestic contributions were lowest in Cambodia (19%).

The Global Fund contributions as a proportion of the total available resources for TB ranged from 11% in Thailand to 51% in the Philippines. Other donors accounted for between 5% (Viet Nam) and 44% (Cambodia) of the total resources.

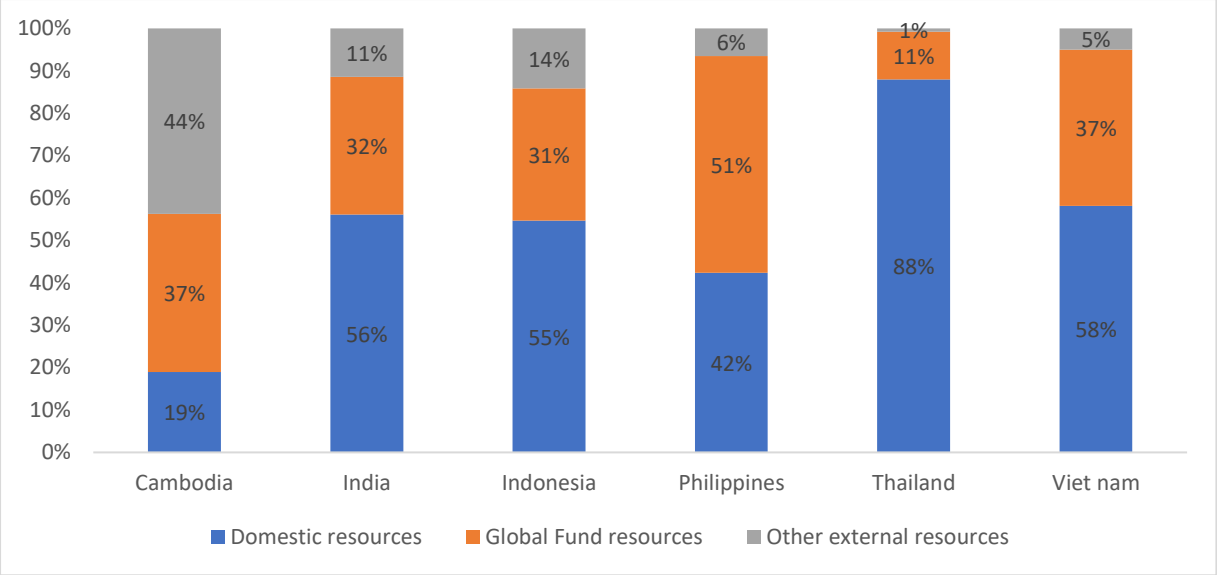

Figure 6: Percentage of TB funding by source for the 2015-2017 implementation period

Note:

1. Pakistan did not report Global Fund spending for the 2015-2017 implementation period; although the funding landscape was available, Bangladesh had not reported TB funding for the 2015-2017 implementation period
2. Indonesia did not report funding for 2015

The Global Fund was the main source of funding for malaria programs

The Global Fund was the main source of funding for malaria programs in three of the four countries where data was available. The Global Fund financed a remarkable 85% of the malaria program in Bangladesh, 57% in India, 51% in Indonesia, but only 30% in Pakistan (Figure 6).

Domestic contributions to fight malaria were highest in Pakistan (70%) and lowest in Bangladesh (14%). The four countries received limited or no funding for malaria programs from other donors. For instance, India did not receive any funding for malaria from other external sources – other than the Global Fund. Pakistan, Bangladesh and Indonesia received <1%, 1% and 3% respectively.

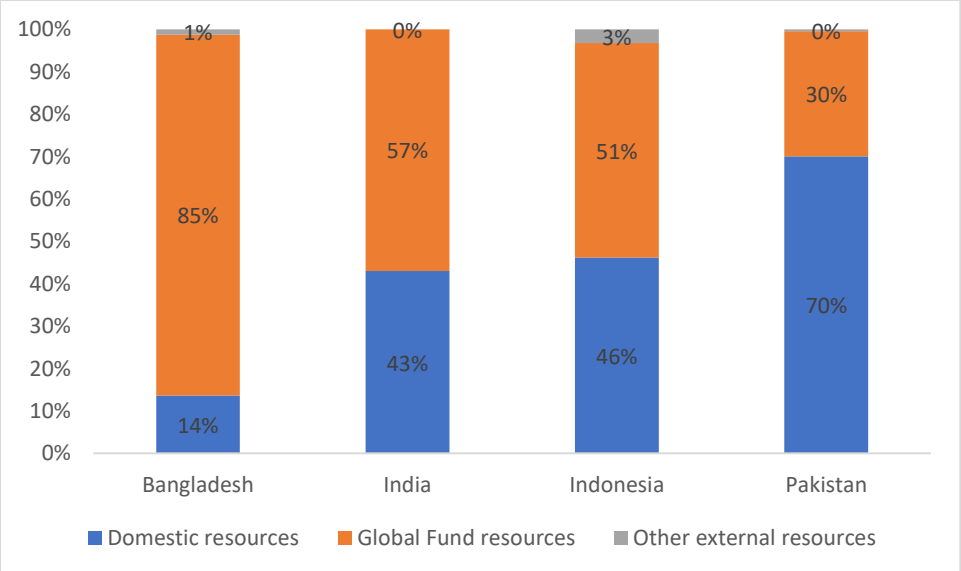

Figure 7: Percentage of malaria funding by source for the 2015-2017 implementation period

Note:

3. Four other countries - Cambodia, Myanmar, Thailand and Viet Nam - received funding through the RAI which was outside the scope of this analysis
4. The funding request for the Philippines was unavailable

Financing of HIV, TB and malaria programs in the 2018-2020 implementation period

Huge gaps in funding for TB and malaria programs in the 2018-2020 implementation period

The sampled countries have a higher burden of TB relative to HIV which leads to greater funding needs for TB programs. Eight countries (excluding Myanmar whose TB/HIV funding request was unavailable)) require in total $5.3 billion for TB and $5 billion for HIV to fully fund their national strategic plans to fight the two diseases, in the 2018-2020 implementation period (Table 4).

For malaria, four countries - Bangladesh, India, Indonesia and Pakistan – (with country-specific malaria grants and where data was available) — require $1.6 billion. Four of the remaining five countries – Cambodia, Myanmar, Thailand and Viet Nam - received funding through the Regional Artemisinin Initiative 2 Elimination (RAI2-E) in this implementation period. The Philippines malaria funding request was unavailable.

The estimated available funding amounted to $3.9 billion for HIV, $2.7 billion for TB and $617 million for malaria, creating a funding gap of 23%, 49% and 61% respectively.

Table 4: Funding needs and availability for the 2018-2020 period for the sampled countries

Disease component	Total Funding needs	Total anticipated resources	Funding Gap	
			US$	%
HIV (n=8)	5,027,796,909	3,870,467,926[a]	1,157,328,983	23%
TB (n=8)	5,260,591,834	2,689,189,527	2,571,402,307	49%
Malaria (n=4)	1,585,094,422	617,286,109	967,808,313	61%

Note: 1. n represents the number of countries included in the analysis:

HIV and TB: Bangladesh, Cambodia, India, Indonesia, Pakistan, the Philippines, Thailand and Viet Nam.

Malaria: Bangladesh, India, Indonesia and Pakistan

2. [a] Global Fund allocation for the Thailand HIV grant unavailable

Share of domestic resources likely to rise in the 2018-2020 implementation period

Countries are expected to progressively contribute a higher proportion of funding towards the three diseases. A comparison of the sources of funding between the two implementation periods shows that the share by domestic resources rose for the three diseases from 64% to 81% for HIV, 55% to 63% for TB and 46% to 65% for malaria (Figure 8). The Global Fund's share of funding decreased for both HIV and malaria whereas it remains constant for TB. Contributions by other external resources decreased for all the three diseases.

These proportions may change as more funding (or saving) becomes available to the countries in the course of this implementation period. In the long run, the proportions will also depend on the actualization of the financial commitments by the government, Global Fund and other donors.

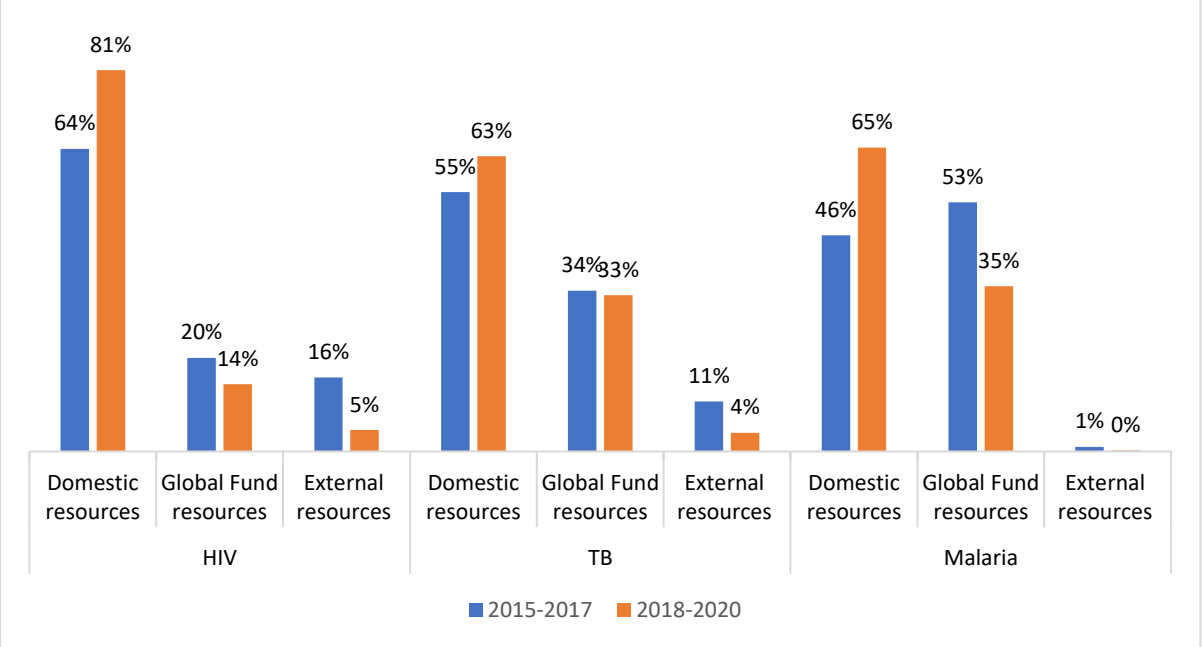

Figure 8: Comparison of sources of funding for the 2015-2017 and 2018-2020 implementation periods for the eight sampled countries (where data was available)

Majority of the countries raised more than two-thirds of their total HIV funding needs

India reported the highest total funding need to finance the HIV strategic plan: $2.5 billion owing to its population size (Figure 9). The total HIV funding need for the remaining countries ranged from $89 million in Cambodia to $923 in Thailand. **Majority of the countries raised more than two-thirds of the total funding required to finance the HIV strategic plan.** Nevertheless, the funding gap was substantial in Bangladesh (68%) and Pakistan (61%).

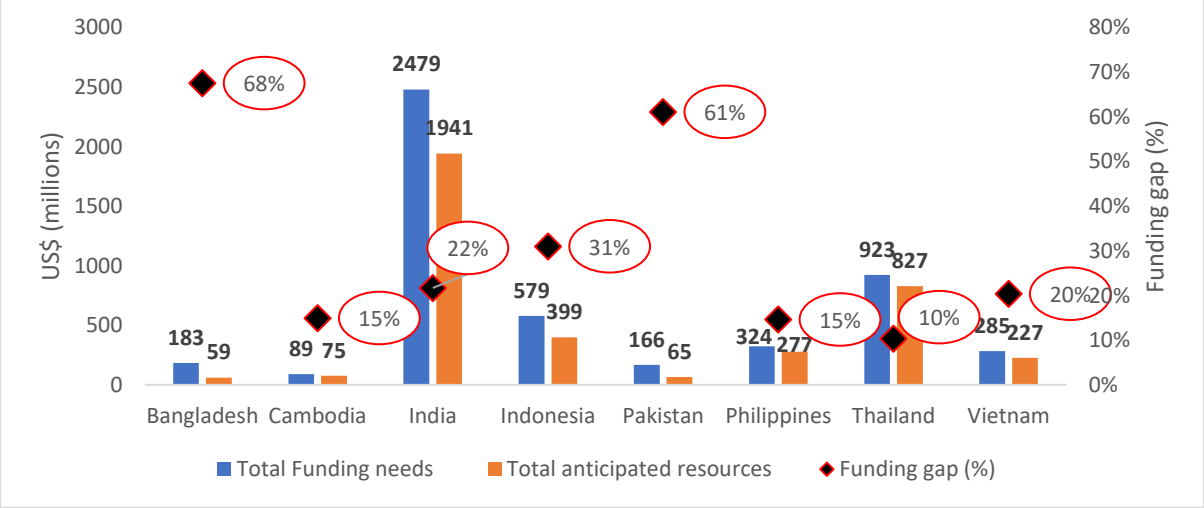

Figure 9: HIV total funding needs, available resources and funding gaps for the period 2018-2020

Domestic contributions to the total available funding were notably high in the Philippines and Thailand, both 95% of the total available funding, followed by India (81%) and lowest at Cambodia (35%) (Figure 10). The proportion of the Global Fund contributions was highest in Cambodia (55%), followed by Pakistan (54%), and lowest in Thailand (0%). External resources play a limited role in

most of the sampled countries. In fact, their share is equal to or less than 5% in five of the eight countries.

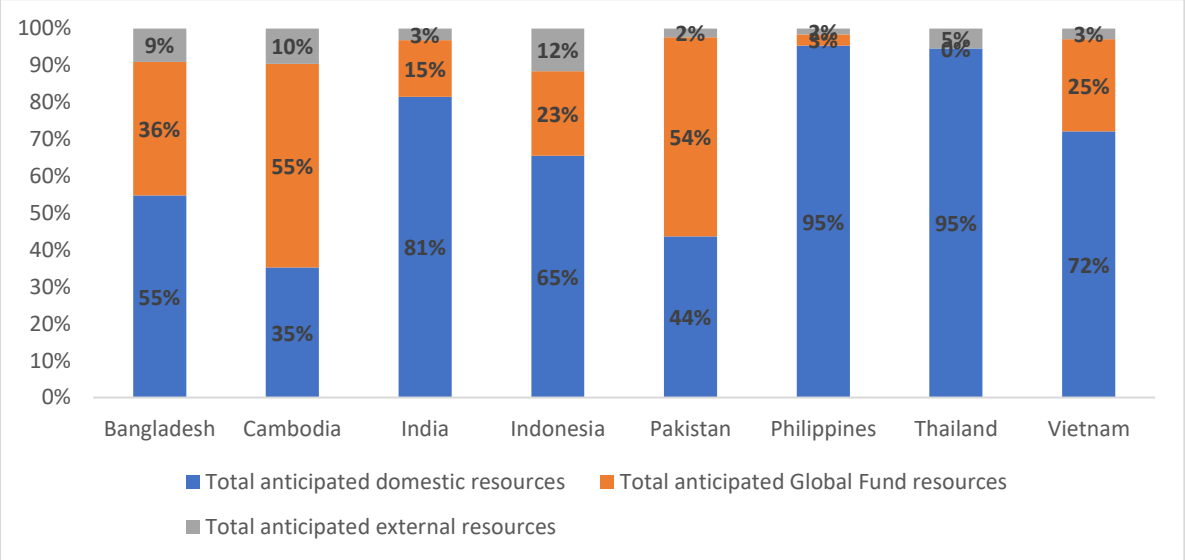

Figure 10: Percentage of HIV funding by source for the 2018-2020 implementation period

Domestic resources fund more than half of the TB programs in five countries in the 2018-2020 implementation period

As was the case for HIV funding, total funding needs to finance the TB national strategic plan was highest in India ($2.7 billion) (Figure 11). The total funding needs among the remaining countries were highest in Indonesia ($933 million) and lowest in Cambodia ($90 million). Five of the eight countries raised at least half of the total funding needs; the other three countries – India, Cambodia, and Pakistan – were yet to raise 52%, 58% and 65% of their total funding needs, respectively. Thailand had the lowest funding gap (20%).

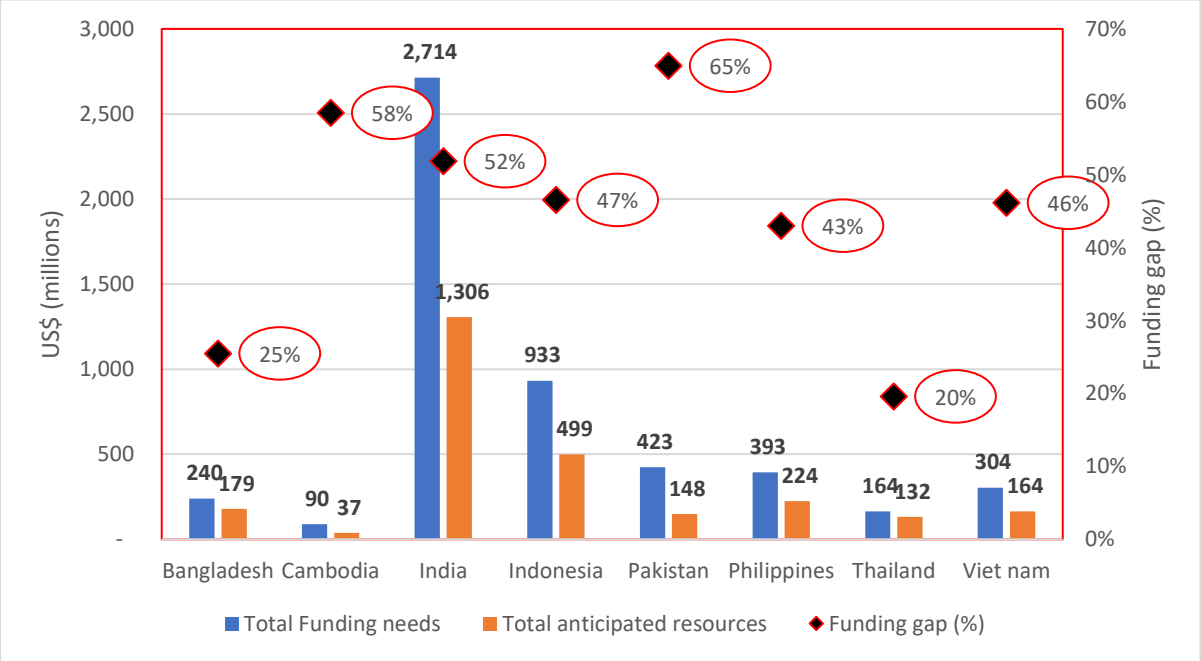

Figure 11: TB total funding needs, available resources and funding gaps for the period 2018-2020

Domestic resources are the main source of funding for the TB national strategic plan in the 2018-2020 implementation period in the sampled countries except in Bangladesh, Cambodia and Pakistan. They accounted for nearly all of the total available funding in Thailand (90%); and about two third of the total available funding in India (68%), Indonesia (67%), Viet Nam (67%) and the Philippines (65%) (Figure 12). Domestic contributions were lowest in Pakistan (12%). **The Global Fund will play a very significant role in two countries: Bangladesh (55% of total available funding) and Pakistan (88%), but a limited one in Thailand (10%).** Other external resources played a less significant role particularly in Pakistan and the Philippines which did not report any funding from external sources. However, external resources accounted for 20% in Cambodia of total available funding.

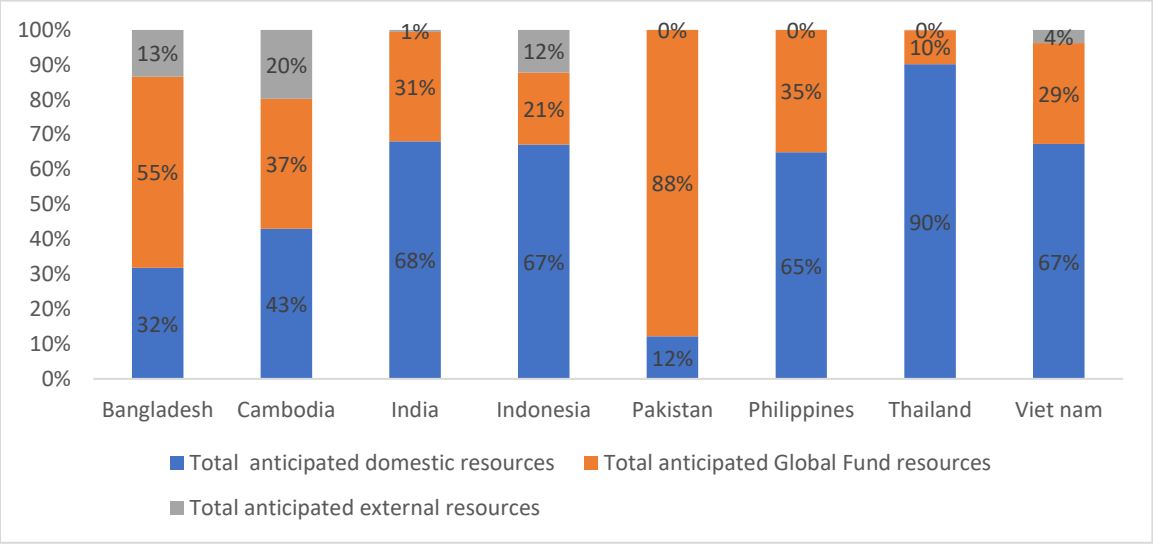

Figure 12: Percentage of TB funding by source for the 2018-2020 implementation period

External resources play a limited role in financing the malaria national strategic plan

India will require $1.2 billion to finance the malaria national strategic plan, the highest amount of the four countries owing to the large population and the huge burden of malaria (Figure 13). The total funding need was lowest in Bangladesh ($64 million). Bangladesh, Indonesia and Pakistan had raised more than two-thirds of the total funding need. However, India had yet to raise 72% of the total funding need.

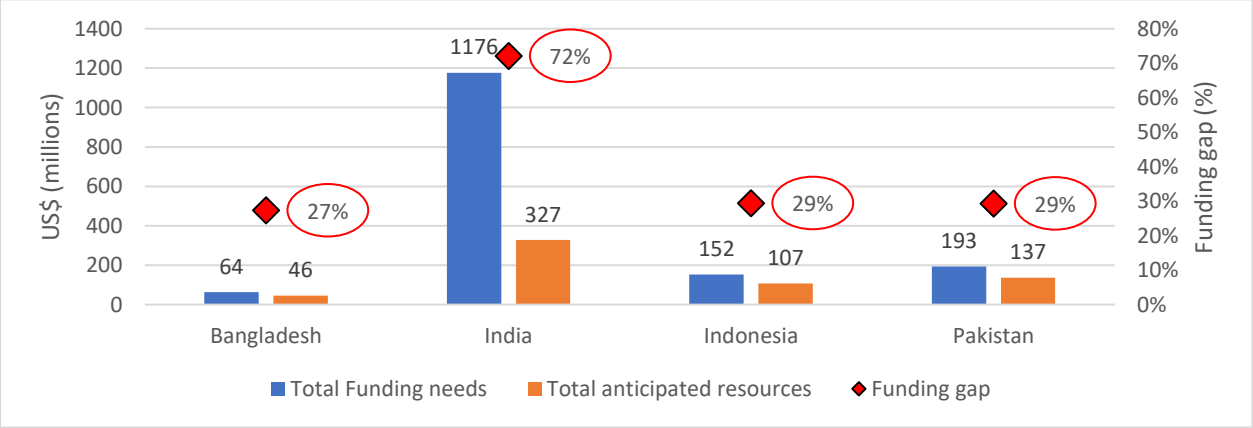

Figure 13: Malaria total funding needs, available resources and funding gaps for the period 2018-2020

Domestic contributions accounted for more than half of the total available funding in three countries: India (77%), Indonesia (50%) and Pakistan (61%) (Figure 14). In Bangladesh, the Global Fund was

the largest contributor and accounted for 79% of the total available funding. **External resources play a limited role financing the malaria national strategic plan in the 2018-2020 implementation period**. In fact, India and Indonesia will not receive any funding from external sources whereas Bangladesh and Pakistan will both raise only 1% of their total funding need from external sources.

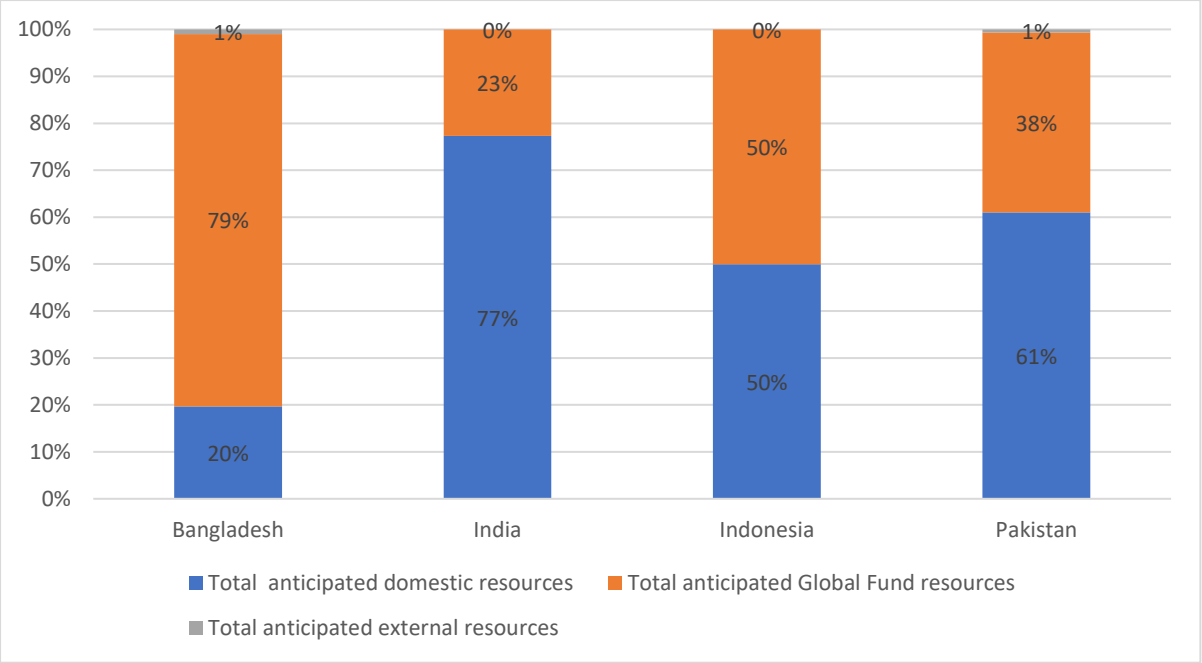

Figure 14: Percentage of TB funding by source for the 2018-2020 implementation period

Discussion

This study found that high impact Asia countries spent on average less than 10% of their total government spending on health. Public spending on health as a percentage of the GDP for all the countries fell short of the recommended target of 5%. Private sources, notably OOPs, were the main source of funding for national health expenditures in 2016, the most recent year for which data is available. Overall, domestic resources accounted for 60% of the total available resources for the three diseases in the Global Fund's 2015-2017 implementation period. Domestic contributions as a share of the total available funding were highest in HIV, followed by TB then malaria in the past and current implementation periods.

What level of public health spending should countries aim for?

Countries need to rely predominantly on public revenue resources if they are to ensure that the population has access to quality and affordable health care services. [20,21,22] Public resources primarily include government budgetary allocations (from taxes and other government revenues) and compulsory (statutory) health insurance.[20] Without such sustained or prepaid sources of funding, countries are often left to depend on external sources of funding or households to pay for their own health.

Technical partners such as WHO and researchers have defined health expenditure targets – both absolute and relative – to guide and assess the adequacy of domestic investments. For instance, the WHO recommends that countries should spend at least 5-6% of their GDP on health or even public spending of $86 per capita for low income countries.[20] An analysis by McIntyre and Metheus reaffirmed that, indeed, meeting these two targets promotes progress towards universal access to health care services. Governments of African countries also committed to invest 15% of their annual budget on health through the Abuja Declaration in 2001.[23]

However, researchers have argued that there is no 'magic number' when it comes to levels of public health spending. Savedoff argued that there is no "right" or "optimal" level of health spending that applies across all countries.[22] He noted that other factors influence the level of spending such as the nature of the health challenges, policy objectives in the health sector, health system efficiency, fiscal capacity, and competing demands on public resources. Similarly, Jowett et al noted that other factors also influence health system performance as evidenced by the wide variation in coverage and health outcomes across countries at any level of government health spending.[20] Therefore, countries should not only place focus on the amount of money invested in health but that the money is spent efficiently.

Why are some countries spending more on health than others?

Findings for health financing from Thailand, when compared to the other sampled countries, suggest that countries with a stronger economy are more likely to invest more in the health sector and in the three diseases. This can be attributed to a larger fiscal space; Thailand is the only upper middle-income country (UMI) in the sample; and is the only country to fund more than half of its current health expenditures using domestic public resources. In addition, at disease level, Thailand funded 90% and 88% of the HIV and TB programs, respectively, in the 2015-2017 implementation period.

Indeed, available literature suggests that increase in public spending on health mainly relies on economic growth and fiscal expansion rather than increased priority of the health sector particularly in middle-income countries. [24-26] However, economic growth does not always result in increased spending on health in low-income countries. In high-income countries, unlike the low- and middle-income countries, budget prioritization drives spending on health.[25]

Behera & Dash found that indeed fiscal capacity - as demonstrated by the government expenditure as a percentage of the GDP – positively influences government health expenditure in South East Asia. Other factors that influence government health expenditure in this region include per capita income,

ageing (the increasing share of people 65 years and above in the total population), TB prevalence and urbanization.[4] Previously, Sagarik had found that public spending on health in South East Asia was positively associated with industrialization and increase in foreign direct investment.[27] On the contrary, Sagarik found that both urbanization and growth in the economy had a negative effect on public health spending. Elsewhere, in sub-Saharan Africa, good governance, national income and the share of this national income that is spent by the government increase government health spending.[28]

Political leadership can also influence domestic investments. Countries are more likely to commit more resources to the health sector if there is strong, consistent political will at the highest levels of government.[29,30] For instance, in Viet Nam, the government took up more responsibility towards the HIV response; between 2014 and 2015 it raised its annual ARV budget from $0.9 million to $4 million and, for the first time, procured ARVs to treat more than 26,000 patients for one year.[29]

Literature also suggests that external funding may reduce government spending on health, a phenomenon referred to as aid fungibility.[31] Governments may reallocate resources from the health sector to other sectors.[24] Lu et al found that for every dollar received from external sources, developing countries reduced domestic spending by 46 cents.[32] But Piatti-Fünfkirchen et al, while comparing external health financing and domestic health spending between two periods - 2005–2007 and 2013–2015 - found that external funding had a positive effect on domestic investments on health in countries in East and Southern Africa.[22]They linked the increase in government spending to increased external financing for health.

Why are some countries spending more on HIV, TB and malaria than other countries?

The GDP per capita and HIV prevalence positively influenced domestic AIDS expenditure in low- and middle-income countries, according to Avila et al. However, Resch et al found variations in AIDS expenditure across countries that could not be explained by a country's income level or the size of the HIV epidemic. Resch et al proposed alternative drivers of domestic AIDS spending including those relating to political commitment, service delivery, and competing priorities. However, the effect of these potential drivers on domestic AIDS spending has not been explored. Tight budgets, limited fiscal space, competing priorities in many countries, insufficient political commitment in others, and, in some cases, an ingrained donor dependency mentality are some of the barriers to increased domestic AIDS spending.[33]

Literature on the drivers of domestic spending on TB and malaria is limited.

The development partners such as the Global Fund (and the United States President's Emergency Plan for AIDS Relief (PEPFAR)) have put in place measures to incentivize domestic investments and reduce the occurrence of aid fungibility. The Global Fund's co-financing policy requires countries to contribute an increasing amount towards the health sector and the three diseases over each funding cycle. The Global Fund can withhold a proportion of a country's allocation - up to 15% or sometimes higher - if the government fails to meet the co-financing commitment which is agreed upon at the grant making stage.[34] For instance, in 2018, the Global Fund withheld 15% ($171 million) of Nigeria's allocation for 2014-2016 due to the country's failure to demonstrate that the country met its counterpart financing commitments for that period.[35]

In their 2018 results report, the Global Fund estimated that domestic financing increased by more than 40% in the 2018-2020 implementation period as compared to the 2015-2017 period based on data from already approved funding requests for 2018-2020; the funding requests accounted for about 75% percent of the total Global Fund allocations.[21] The Global Fund further estimated that the level of domestic funding will rise by 48% in the 2021-2023 period to $46 billion.[36]

Countries should be innovative in raising funds for health

Countries can increase the available domestic resources by increasing revenue collection, increasing budgetary allocations to the health sector (from low-priority expenditures) and obtaining debt relief (which frees up additional resources for allocation to the health sector).[37] These are often difficult political processes. In addition, increments in domestic investments in some countries particularly those that are low-income may still not be enough to fully support the three disease programs and the health sector in general. Countries can supplement domestic resources using innovative financing mechanisms. Within the Global Fund context, three main innovative mechanisms are used. They are : increase revenues – such as Product (RED) and debt swaps-; incentivize investments – co-financing with development partners, blended financing with development partners; or improve delivery of services – such as results- or performance-based financing including impact bonds.

Some of the innovative financing mechanisms have shown significant potential, such as the Debt2Health Initiative which has raised $120 million since its launch in 2007,[36] while others like loan buy-downs and social and development impact bonds remain yet to be fully explored.

The increased resources from domestic, traditional donors, and innovative financing mechanisms will prove critical not only for the three diseases but also for the health sector in general.

Conclusion

High impact Asia countries spend less than 10% on average of the total public expenditures on health. Most of these countries fund their national health expenditures predominantly using private sources of funds, most notably out-of-pocket payments by households. External finances play a limited role in financing the health sector in these countries. Financing for HIV, TB and malaria shows mixed results: more than half of funding for HIV and TB came from domestic resources while the Global Fund was the biggest contributor to malaria financing.

Reliance on out-of-pocket payments risks pushing users of health services to poverty. External funds, which still play a key role financing the three diseases in the sampled countries, cannot be relied on in the long term. These external resources are likely to decrease in the coming years as the economies of these countries continue to grow. Therefore, governments of these high impact Asia countries need to adopt more sustainable sources of financing such as budgetary allocations and compulsory health insurance. They should also leverage on existing innovative financing mechanisms which are managed by Global Fund and its partners. Countries and international partners should also pay more attention to the efficiency in the use of the available resources as savings can go a long way in decreasing the funding gaps and increasing the impact.

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Appendices

Appendix 1: Classification of countries in the Asia and Pacific region by the different agencies

World Health Organization (WHO) classification*	
South-East Asia	Bangladesh, Bhutan, Democratic Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor-Leste
Western Pacific	Cambodia, China, Lao People's Democratic Republic, Malaysia, Papua New Guinea, Philippines, Republic of Korea, Solomon Islands, Vanuatu and Viet Nam
World Bank classification	
East Asia and Pacific	Cambodia, China, Indonesia, Korea, Lao PDR, Malaysia, Mongolia, Myanmar, Pacific Islands, Papua New Guinea, Philippines, Singapore, Thailand, Timor-Leste and Viet Nam
South Asia	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka
UNAIDS classification	
Asia and Pacific	Afghanistan, Australia, Bangladesh, Bhutan, Brunei Derussalam, Cambodia, China, Democratic People's Republic of Korea, Federated States of Micronesia, Fiji, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Maldives, Marshall Islands, Mongolia, Myanmar, Nauru, Nepal, New Zealand, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea, Singapore, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu and Viet Nam

Note: * WHO classifies Pakistan as of the Eastern Mediterranean region

Appendix 2: Asia and Pacific countries by income group (as classified by the World Bank)

Income classification (N no. of countries)	Countries
Low income (=3 countries)	Afghanistan, Democratic People's Republic of Korea, Nepal
Lower middle income (=19 countries)	Bangladesh, Bhutan, Cambodia, India, Indonesia, Kiribati, Lao PDR, Micronesia, Fed. Sts., Mongolia, Myanmar, Pakistan, Papua New Guinea, Philippines, Solomon Islands, Sri Lanka, Timor-Leste, Vanuatu, Viet Nam
Upper middle income (=11 countries)	American Samoa, China, Fiji, Malaysia, Maldives, Marshall Islands, Nauru, Samoa, Thailand, Tonga, Tuvalu
High income (=14 countries)	Australia, Brunei Darussalam, French Polynesia Guam, Hong Kong SAR (China), Japan, Republic of Korea, Macao SAR (China), New Caledonia, New Zealand, Northern Mariana Islands, Palau, Singapore, Taiwan (China)