

Chapter 6.

Financing malaria control

The three major sources of funds for malaria control programmes are national government spending, external assistance from donors and household or private “out-of-pocket” expenditure. In the Global Malaria Action Plan (1), it is estimated that these sources comprised 34%, 47% and 19%, respectively, of total spending on malaria globally in 2007. This Report does not address household expenditures but focuses on external funding for malaria and national government spending. It considers the following issues: *i)* trends in international and domestic financing for malaria and their relation to estimated resource requirements; *ii)* how funds disbursed from external agencies have been allocated to different geographical regions, countries and programmes; and *iii)* the relation between external financing, programme implementation and disease trends.

6.1 Sources of information

The methods for obtaining information on malaria financing varied according to the type of information considered: commitments, disbursements or expenditures (see **Box 6.1** for definitions of these terms).

BOX 6.1

Types of financial information

- PLEDGE** – A non-binding announcement of intentions to contribute a certain amount of funds.
- COMMITMENT** – A firm obligation expressed in writing and backed by the availability of the necessary funds for a particular project, programme or sector.
- DISBURSEMENT** – The placement of resources at the disposal of a government or implementing agency.
- EXPENDITURE** – The use of funds to pay for commodities, buildings, equipment, services or salaries.

6.1.1 Commitments

Information on commitments to malaria programmes was obtained from two sources: records of funding agencies on malaria grants awarded (Global Fund, United States President’s Malaria Initiative, UNITAID, World Bank¹), and information supplied by malaria-endemic countries, particularly to obtain host government contributions. Information on commitments is available up to 2008 or 2009.

Commitments represent a firm agreement by a funding agency to provide funds according to a prescribed plan. This may be a budget approved by a national government or a grant agreement between a funding agency and a programme implementer. Commitments provide an indication of the funding priority given to malaria, to particular countries or programmes. Information on commitments can often be obtained for the most recent financial year but do not always translate into programme expenditures, as there may be delays in disbursement of funds or problems in programme implementation which lead to reprogramming of resources. Hence, in analysing what funds have been used for malaria control, it is usually preferable to examine disbursements or actual expenditures, which give a more accurate picture of the extent to which recipients have benefited.

6.1.2 Disbursements

Information on disbursements was obtained from three sources: the database on global health financing maintained by the Institute of Health Metrics and Evaluation (2, 3); records of disbursements by funding agencies, notably the Global Fund and the United States President’s Malaria Initiative; information supplied by malaria-endemic countries to WHO annually on host government expenditures and breakdowns of expenditures by type; and information recorded by the Global Fund Enhanced Financial Reporting system on breakdowns of Global Fund expenditures. The various data sources have different levels of completeness. The most comprehensive dataset on disbursements is that maintained by the Institute for Health Metrics and Evaluation, which provides information on the disbursements of 27 agencies that provide funding for malaria; this was supplemented with additional information on disbursements supplied by individual donor agencies. Information on disbursements is available up to 2007.

1 World Bank financing for malaria is usually mediated through a credit from the International Development Association, which is an interest-free loan, with repayments starting after 10 years and maturing at 35 or 40 years. An annual service charge of 0.75% applies.

Information on disbursements or expenditures usually lags behind that on budgets or commitments by a minimum of 1 year, because a programme needs time to make such disbursements or expenditures and to compile data. It is sometimes difficult to distinguish between disbursements and expenditures; e.g. transfer of money by a principal recipient of a Global Fund grant to subrecipients may be recorded as an expenditure, although it is yet to be translated into goods and services that benefit target populations. Also, some funds disbursed may not be spent during the year the disbursement was made. In such cases, actual spending may be much less than the disbursements reported by donors. Information on disbursements is, however, generally more complete than that available for expenditures, and was hence central to most of the analyses presented here.

6.1.3 Other health spending

The funds reported as being available for malaria control are usually for specific interventions, such as the purchase and distribution of ITNs, RDTs or medicines. They do not include government funding or external assistance for the support of health systems, because it is difficult to assign specific amounts to malaria, even though malaria programmes clearly benefit from such support. In addition, much external assistance is provided through multilateral channels as technical support or through nongovernmental organizations, and is not always captured by the sources of information examined. Hence, it is possible that the funds available for malaria are greater than those recorded here. Nevertheless, the analysis presented gives an indication of the overall levels of funding for malaria in relation to resource requirements and how these have changed over time.

6.2 Resource requirements and trends in international and domestic financing

6.2.1 Resource requirement

The Global Malaria Action Plan estimated that between US\$ 5.0 billion and US\$ 6.2 billion will be required per year between 2009 and 2015 to scale-up and sustain the control and elimination of malaria globally (**Table 6.1**).

6.2.2 Commitments by external agencies

Figure 6.1 shows the financial commitments to malaria control by the four largest sources of external funds for malaria. It shows a fivefold increase in commitments for malaria control, from approximately US\$ 0.3 billion per year in 2003 to US\$ 1.7 billion in 2009, with a particularly large increase in 2009.

6.2.3 Disbursements by external agencies to malaria endemic countries

International disbursements for malaria to malaria-endemic countries increased from US\$ 35 million in 2000 to US\$ 652 million in 2007², an 18-fold increase. The Global Fund accounted for US\$ 1.3 billion or 62% of all external funds disbursed to malaria-endemic countries between 2000 and 2007 (**Fig. 6.2**). The United States Agency for International Development (including the President's Malaria Initiative) was second to the Global Fund as a source of funds between 2000 and 2007, increasing its malaria funding to countries by a factor of 37, from US\$ 6 million in 2000 to US\$ 226 million in 2007. The United Kingdom Department for International Development was third, increasing its contributions from US\$ 2 million in 2000 to US\$ 29 million in 2007. Note that Global Fund disbursements for malaria, at US\$ 1.3 billion, represent only 48% of the US\$ 2.6 billion

Table 6.1 Annual global resource requirements (US\$ millions) for malaria control

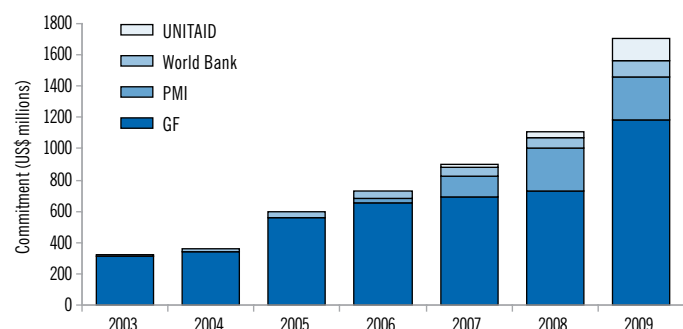
REQUIREMENT	2009	2010	2015	2020	2025
Prevention					
Long-lasting insecticidal nets and insecticide-treated nets	2091	2091	1689	1807	1035
Indoor residual spraying	1632	1883	2026	2047	1531
Intermittent preventive treatment in pregnancy IPTp	6	8	9	9	10
Subtotal	3729	3982	3724	3863	2576
Case management					
Rapid diagnostic tests RDTs	679	975	368	109	43
Artemisinin-based combination therapies ACTs	257	356	164	1087	41
Chloroquine and primaquine	5	5	2	1	–
Severe case management	27	23	16	9	4
Programme support					
Total	5335	6180	5038	5856	3378

2 Another US\$ 200 million were disbursed in 2007 but were either directed to research or to regional programmes and are difficult to assign to individual countries or programme implementation. In particular, the disbursement of the Bill and Melinda Gates Foundation for malaria was US\$ 160 million in 2007, but much of this contribution was for research and is not represented in country contributions.

3 If government budgets or expenditure appeared to include external assistance, the external assistance was excluded.

committed for malaria by the Fund between 2003 and 2007; some of the commitments are withheld during initial grant negotiations and again at Phase 2 review when poorly performing grants are reduced. This illustrates that information on commitments to malaria may not provide an accurate picture of funds immediately available for malaria control.

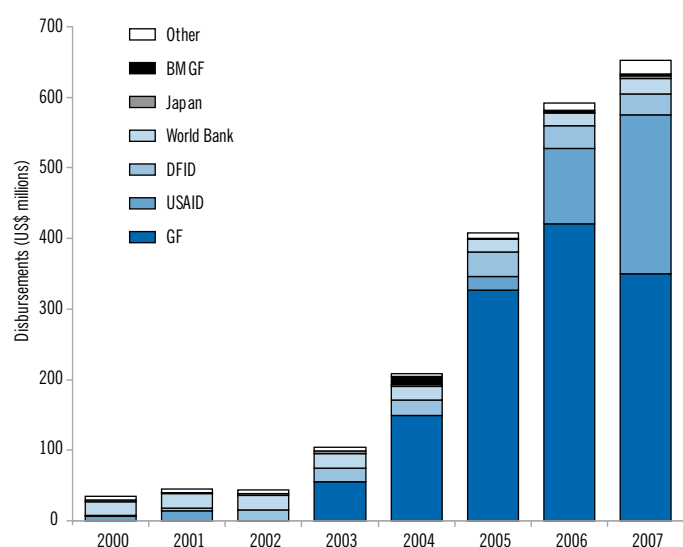
Figure 6.1 Funding commitments of the Global Fund, UNITAID, the US President's Malaria Initiative and the World Bank, 2003–2009



PMI: US President's Malaria Initiative; GF: Global Fund;

Annual commitments for World Bank-funded projects were calculated from the planned disbursements described in project appraisal documents, or, if these were not available, by assuming a constant flow of funds throughout the life of a project, with funding starting 6 months after board approval. Commitments of the PMI were allocated to calendar years proportionally according to the number of months of a financial year falling in each calendar year. Annual commitments of the Global Fund were calculated on the assumption of a project life span of 5 years and a constant flow of funds throughout that period. Commitments of UNITAID were distributed evenly to calendar years according to the expected project length.

Figure 6.2 Disbursements to malaria-endemic countries 2000–2007



Source: Institute of Health Metrics and Evaluation database with amendments to the President's Malaria Initiative and World Bank disbursements

BMGF: Bill and Melinda Gates Foundation; DFID: Department for International Development (United Kingdom); USAID, United States Agency for International Development; GF: Global Fund to fight AIDS, Tuberculosis and Malaria

4 Kiszewski et al. (2007) (4) estimated that US\$ 3.5–5.6 billion would be required per year between 2006 and 2015 but used a slightly different basis for calculation, e.g. without budgeting for the use of RDTs for diagnosing malaria in children under 5 years of age in Africa.

5 In the Global Malaria Action Plan (1), it was estimated that government and household financing had been approximately equal to external financing in 2007.

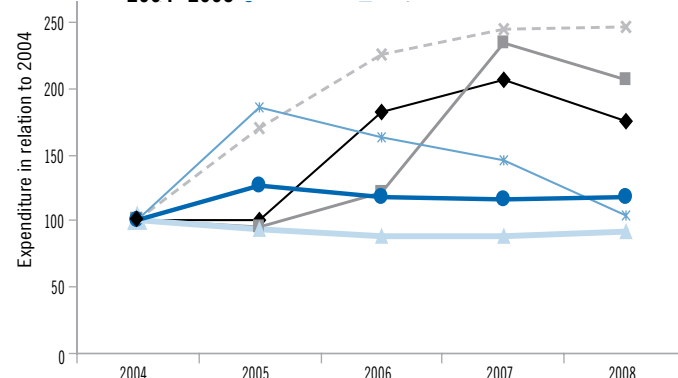
6.2.4 Domestic financing in malaria-endemic countries

Information on domestic financing for malaria is insufficiently complete to allow a comprehensive analysis of trends. An important issue, however, is whether government financing for malaria remains stable in the presence of large quantities of external financing, or whether it is reduced or increases. The analysis was restricted to 31 countries that provided information on government financing for malaria for at least 5 of the past 9 years and included data for 2007 or 2008. When possible, government expenditure was used; if this information was not available, government budgets for malaria were used³. Figure 6.3 shows the changes in domestic financing for malaria in these countries, averaged for each WHO region, each country being given equal weight. Although the trends among these countries might not be generalizable, they represent the only information currently available. The evidence that external financing for malaria displaces government financing is mixed: domestic financing for malaria increased in a range of countries in all regions, but a potential downwards trend between 2007 and 2008 was seen in two regions, and there was a steady decrease between 2005 and 2008 in the South-East Asia Region. Better information on domestic financing for malaria would allow a more accurate, complete picture of global malaria financing.

6.2.5 Commitments in relation to projected requirements

While the increase in external assistance for malaria has been unprecedented, the total funds available for malaria control are still lower than the annual amount estimated in the Global Malaria Action Plan to be necessary for successful control of malaria globally: more than US\$ 5 billion per year⁴. Even if the high level of malaria commitments for 2009 (US\$ 1.7 billion) is translated into disbursements and programme expenditures and complemented by equal levels of government and private sector funding⁵, the total funds available for malaria control would be in the region of US\$ 3.4 billion, or only 70% of projected requirements.

Figure 6.3 Trends in governmental expenditures for malaria, 2004–2008



Source: National malaria programme reports to WHO

AFR, African Region; EMR, Eastern Mediterranean Region; EUR, European Region; RA, Region of the Americas; SEAR, South-East Asia Region; WPR, Western Pacific Region – Government financing for malaria in each region is indexed at 100 in 2004; subsequent values represent the percentage of the 2004 value, i.e. 250 for the Region of the Americas in 2008 indicates that government spending in 2008 value was 250% of the 2004 value or an increase of 150%.

6.3 Allocation of disbursed funds from external agencies to regions, countries and programmes

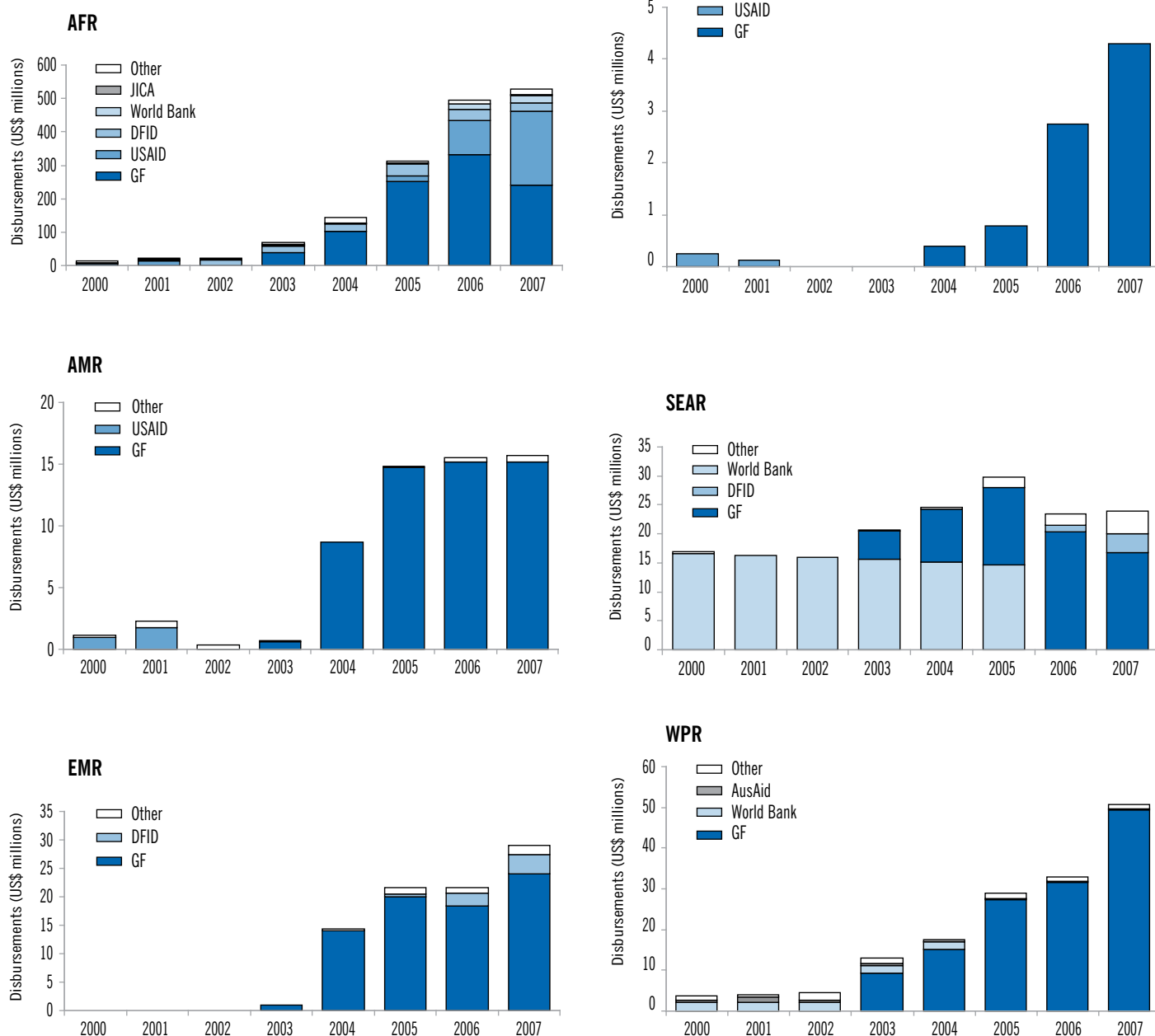
6.3.1 Disbursements by external agencies, by WHO region

The Global Fund was the dominant source of external finance in all regions between 2000 and 2007, except for the South-East Asia Region, where World Bank funding accounted for 55% of disbursements by external agencies (Fig. 6.4). The Global Fund accounted for 96% of disbursements in the European Region, 88% in the Eastern Mediterranean Region and 92% in the Region of the Americas. In the African Region, Global Fund support represented 60% of external support, with 22% from the United States Agency for International

Development, 9% from the United Kingdom Department for International Development, 3% from the World Bank and 1% from the Japan International Cooperation Agency.

Between 2000 and 2007, disbursements by external agencies for malaria increased by a factor of 40 in the WHO African Region, 30 in the Eastern Mediterranean Region (since 2003), 18 in the European Region, 14 in the Western Pacific Region and 14 in the Region of the Americas. Only the South-East Asia Region registered no substantial increase in external assistance, with 2007 levels only 1.4 times those of 2000. This was partly due to the conclusion of a major World Bank project in India in 2005, which was not replaced until 2008. Even if the new World Bank vector-borne disease control project is included, however, the increase in funding to the South-East Asia Region is the least of all regions.

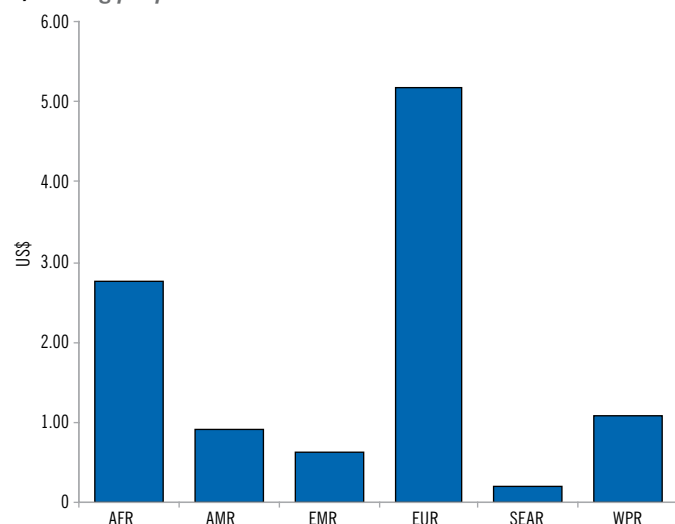
Figure 6.4 Disbursements by external agencies for malaria by WHO Region



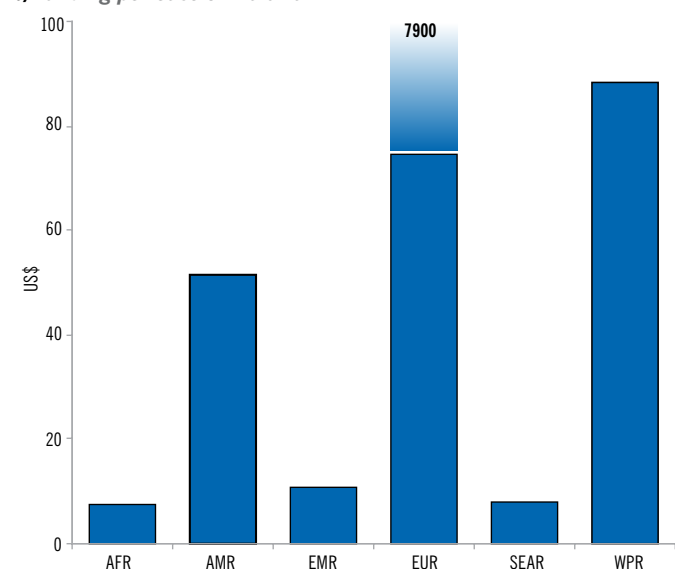
Source: Institute for Health Metrics and Evaluation database, with amendments to the disbursements of the United States President's Malaria Initiative and the World Bank
 AFR, African Region; RA, Region of the Americas; EMR, Eastern Mediterranean Region; EUR, European Region; SEAR, South-East Asia Region; WPR, Western Pacific Region; JICA, Japan International Cooperation Agency; USAID, United States Agency for International Development; DFID, Department for International Development (United Kingdom); GFATM, Global Fund to fight AIDS, Tuberculosis and Malaria

Figure 6.5 Disbursements from external agencies 2000–2007, in relation to three measures of malaria burden

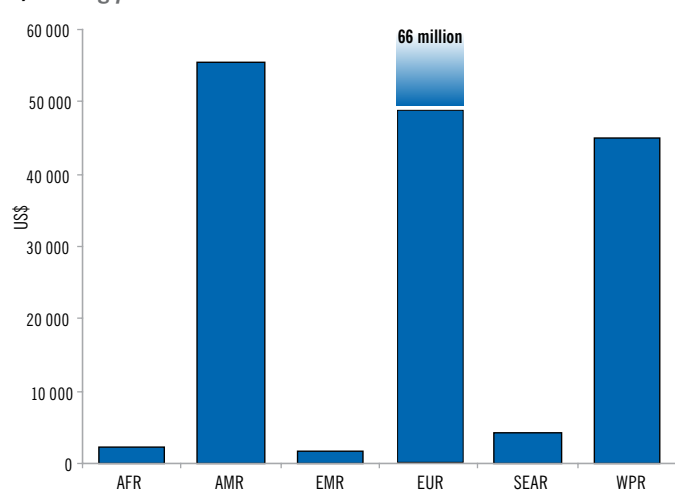
a) Funding per person at risk of malaria



b) Funding per case of malaria



c) Funding per death from malaria



Source: Institute for Health Metrics and Evaluation database with amendments to the disbursements of the United States President's Malaria Initiative and the World Bank
 AFR: African Region; AMR: Region of the Americas; EMR: Eastern Mediterranean Region; EUR: European Region; SEAR: South-East Asia Region; WPR: Western Pacific Region

6.3.2 Disbursements by external agencies in relation to epidemiological need

Figure 6.5 shows external assistance in relation to three measures of malaria burden: population at risk for malaria,⁶ estimated number of cases of malaria and estimated number of deaths from malaria. Such an analysis of funding in relation to need does not take into account domestic sources of funds, the overall level of development of malaria programmes in countries, purchasing power, the types of interventions needed in different epidemiological settings or their cost. Nevertheless, it can give some insight into the extent to which external assistance flows to countries with high disease burdens.

For many countries, the population at risk is the most useful measure, as it defines the number of people to be protected by vector control programmes, such as with ITNs or IRS. When implemented, vector control programmes are expected to account for the majority of a malaria programme's spending and hence can provide a guide to the levels of resource needs (1). In countries with low disease burdens, where much of the population is classified as at low risk, however, the primary methods of control may be case detection and treatment, surveillance and epidemic prevention. In these countries, the number of malaria cases may be a better guide to resource need.

Populations at risk for malaria in the European Region received the most assistance, at US\$ 5.18 per person, followed by the African Region, at US\$ 2.76. The lower levels of assistance to other regions are partly due to the large numbers of people living in areas of relatively low risk (fewer than one case per 1000 per year). Figure 6.5 also shows disbursements in relation to the estimated numbers of cases and deaths due to malaria and suggests that larger amounts are received by malaria-endemic countries in the European, Western Pacific and the Americas regions. The African Region receives less external assistance in relation to the estimated numbers of cases or deaths due to malaria.

6.3.3 Disbursements by country

The number of countries receiving external assistance for malaria increased from 29 in 2000 to 76 in 2007 (out of a total of 108 malaria-endemic countries in 2007), the largest increase being in Africa (see Fig. 6.6). Only two malaria endemic sub-Saharan countries, Botswana and Chad, did not receive external assistance.

The number of agencies funding malaria control also increased between 2000 and 2007, from 14 to 22, with the largest increase in the African Region (from 12 to 19 agencies). In 2007, 15 countries in the Region received funds from a single external agency;⁷ seven

6 Populations at low risk for malaria (living in areas with fewer than one case reported per 1000 per year) are given half the weight of populations at high risk (those living in areas with one or more case reported per 1000 per year). This procedure was followed in order that countries with only populations at low risk for malaria could be included in the analysis and also to take into account the greater need for malaria programmes and funds in countries with larger proportions of their population at high risk for malaria. The weighting is quite arbitrary, but similar results are obtained if populations at low risk are weighted as 0 or 1.

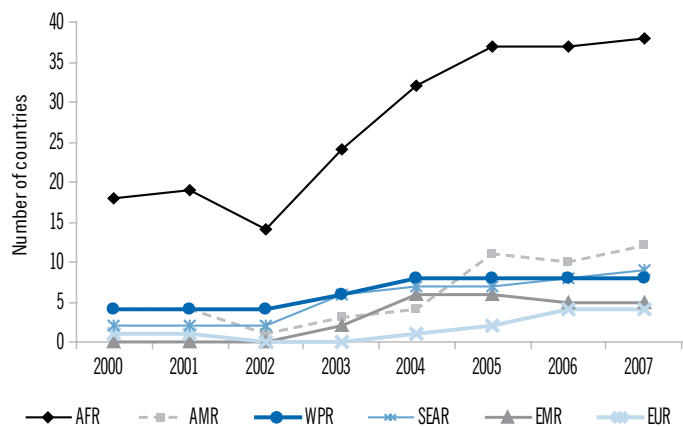
7 In 13 countries, the Global Fund was the sole external source of funds, the exceptions being the Congo (from Spain) and Liberia (from the United States).

Table 6.2 External assistance disbursed to malaria-endemic countries, 2000–2007 (US\$ millions)

AFR	Total	% in region	AMR	Total	% in region	EUR	Total	% in region
Kenya	182	11%	Haiti	10	16%	Tajikistan	3.2	37%
UR Tanzania	155	10%	Guatemala	9	16%	Uzbekistan	2.0	23%
Ethiopia	151	9%	Honduras	8	13%	Georgia	1.7	20%
Uganda	123	8%	Peru	8	13%	Kyrgyzstan	1.7	20%
Mozambique	95	6%	Bolivia (Pluri. State of)	7	12%	Azerbaijan	–	0%
Zambia	88	6%	Nicaragua	5	8%	Turkey	–	0%
Rwanda	79	5%	Colombia	4	7%	TOTAL	8.6	100%
Nigeria	79	5%	Suriname	4	6%			
Angola	68	4%	Ecuador	2	3%			
Malawi	63	4%	Venezuela (Bol. Rep. of)	2	3%			
Madagascar	63	4%	Guyana	1	2%			
DR Congo	62	4%	Brazil	0	0%			
Senegal	56	3%	Argentina	–	0%	SEAR	Total	% in region
Ghana	51	3%	Belize	–	0%	India	108	63%
Niger	28	2%	Costa Rica	–	0%	Indonesia	19	11%
Benin	28	2%	Dominican Republic	–	0%	Myanmar	11	6%
Burundi	23	1%	El Salvador	–	0%	Bangladesh	8	5%
Cameroon	22	1%	French Guiana	–	0%	Timor-Leste	7	4%
Eritrea	20	1%	Mexico	–	0%	Nepal	7	4%
Mali	20	1%	Panama	–	0%	Sri Lanka	6	4%
Liberia	19	1%	Paraguay	–	0%	Thailand	5	3%
Zimbabwe	17	1%	TOTAL	59	100%	Bhutan	1	1%
Gambia	15	1%				Dem. People's Rep. Korea	–	0%
Burkina Faso	14	1%				TOTAL	172	100%
Togo	13	1%						
Gabon	12	1%						
Namibia	11	1%						
Central African Republic	11	1%						
Sierra Leone	8	1%	EMR	Total	% in region	WPR	Total	% in region
Guinea	8	0%	Sudan	44	50%	Philippines	37	24%
Equatorial Guinea	5	0%	Somalia	21	24%	Lao People's Dem. Rep.	35	22%
Côte d'Ivoire	4	0%	Yemen	8	9%	China	27	18%
South Africa	3	0%	Afghanistan	7	8%	Viet Nam	18	11%
Mauritania	3	0%	Pakistan	6	7%	Cambodia	18	11%
Sao Tome and Principe	3	0%	Djibouti	2	2%	Papua New Guinea	12	8%
Guinea-Bissau	2	0%	Islamic Republic of Iran	–	0%	Solomon Islands	6	4%
Comoros	2	0%	Iraq	–	0%	Vanuatu	3	2%
Swaziland	1	0%	Saudi Arabia	–	0%	Malaysia	–	0%
Congo	0	0%	TOTAL	88	100%	Rep. of Korea	–	0%
Cape Verde	0	0%				TOTAL	155	100%
Botswana	–	0%						
Chad	–	0%						
TOTAL	1 606	100%						

Source: Institute for Health Metrics and Evaluation database with amendments to disbursements from the United States President's Malaria Initiative and the World Bank
0% indicates that the country received less than US\$ 0.5 million, while a dash indicates that the country received no external assistance.

Figure 6.6 Numbers of countries receiving external assistance for malaria control

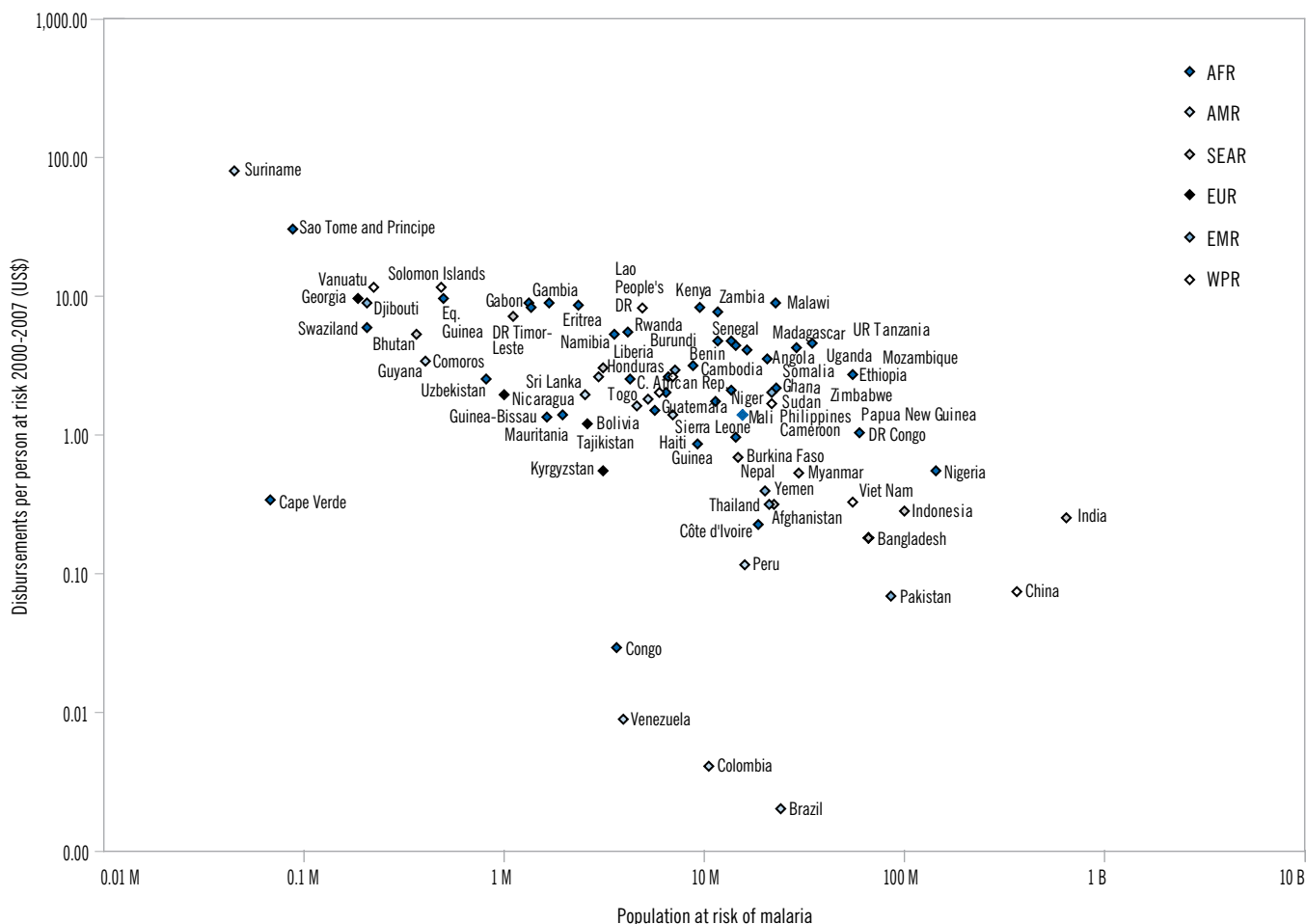


Source: Institute for Health Metrics and Evaluation database with amendments to the disbursements of the United States President's Malaria Initiative and the World Bank
 AFR, African Region; AMR, Region of the Americas; EMR, Eastern Mediterranean Region; EUR, European Region; SEAR, South-East Asia Region; WPR, Western Pacific Region

countries from five or more external agencies (United Republic of Tanzania, 11; Kenya, 7; Mozambique, 6; Zambia, 6; Angola, 5; Nigeria, 5; and Uganda, 5). Ten countries accounted for 54% of disbursements between 2000 and 2007 (Table 6.2); all except India were in the African Region. The latest commitments for malaria in round 8 of the Global Fund and from the United States President's Malaria Initiative are likely to change this pattern.

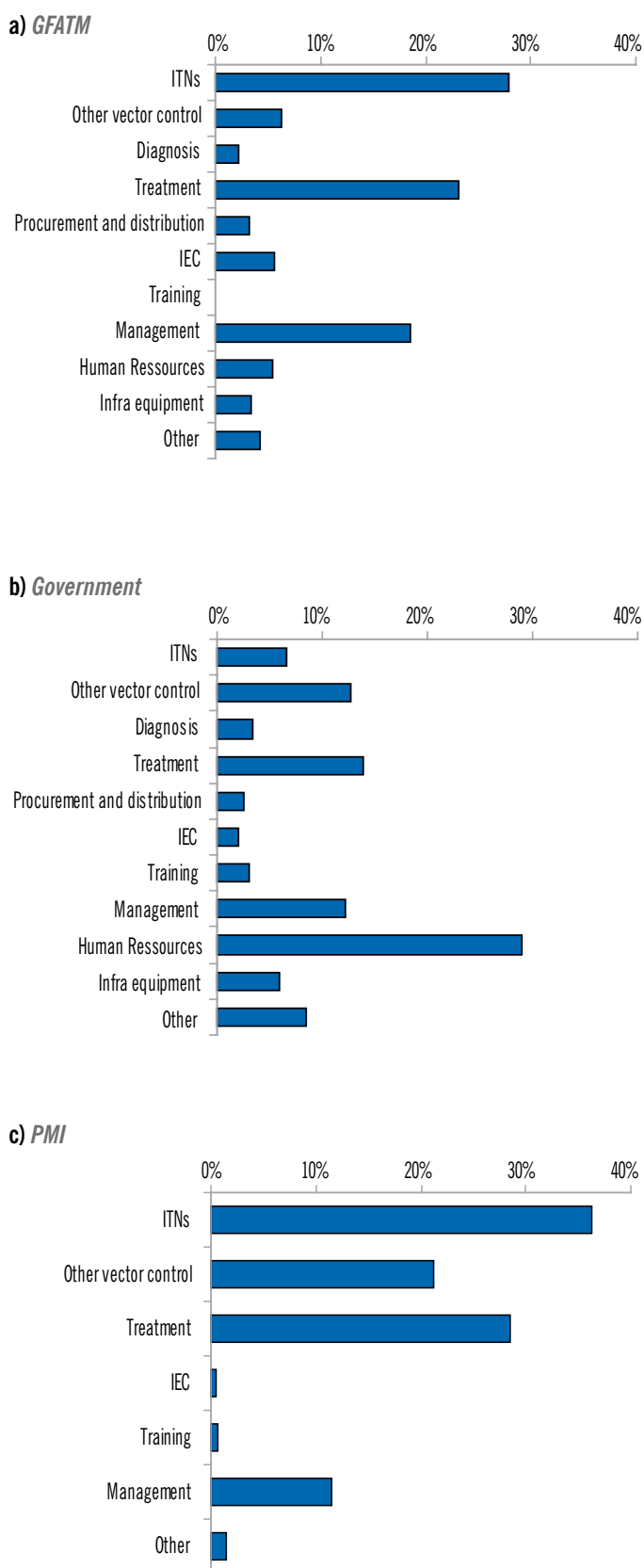
Figure 6.7 shows malaria disbursements by external agencies per person at risk for malaria in relation to the size of the population at risk. It suggests that smaller countries (such as Sao Tome and Principe, Suriname and Vanuatu) receive more funds per capita than larger countries (such as China, India and Pakistan). Some countries receive more external assistance than others with equivalent populations at risk (e.g. Gambia, Kenya and Malawi). Other countries, such as Cape Verde, Congo and Brazil, are outliers from the overall trend and appear to have lower levels of external funding even after their size is taken into account. The pattern of funding whereby smaller countries receive higher per capita amounts may be appropriate if malaria programmes for smaller populations have proportionally higher fixed costs; however, programmes in smaller countries may also have lower costs for distribution of commodities such as ITNs, ACTs and diagnostics. An obstacle to increasing funding in larger countries is affordability; if all countries had received US\$ 5 per capita (as received by the top 25% of countries) during the period analysed,

Figure 6.7 Relation between funds disbursed per person at risk for malaria and number of people at risk



Source: Disbursements: Institute for Health Metrics and Evaluation database with amendments to disbursements from the United States President's Malaria Initiative and the World Bank; populations at risk: reports from malaria-endemic countries to WHO
 AFR, African Region; RA, Region of the Americas; SEAR, South-East Asia Region; EUR, European Region; EMR, Eastern Mediterranean Region; WPR, Western Pacific Region

Figure 6.8 Uses of funds from different sources



Sources: GFATM (Global Fund to fight AIDS, Tuberculosis and Malaria): Enhanced financial reporting system; Government, annual reports from malaria-endemic countries to WHO; PMI (United States President's Malaria Initiative): Third annual report, 2009 (6)
 ITN, insecticide-treated net; IEC, information, education and communication

the amount required for malaria programmes would be more than US\$ 2 billion per year, or three times current disbursements to endemic countries.

Very large countries such as China and India appear to be particularly disadvantaged with respect to receipt of external assistance for malaria control, as noted previously by Snow et al. (5). Part of the reason for the apparently low levels of disbursements in very large countries might be that the populations at risk are estimated less precisely and may be overestimated. Populations at risk in large countries are defined within comparatively large administrative units (the median population size of a district in India is 1.5 million), in which the entire population may be classified as being at high risk, even if malaria is confined to a limited area. In smaller countries, where the administrative units are smaller (the median population of a district in Suriname is 22 000), areas with malaria transmission can be delineated more precisely. Therefore, while the observation that large countries receive less external financing is a concern, the imprecision in defining populations at risk in such countries should be taken into account, as should other factors that determine the need for external financing, such as the availability of domestic funds.

6.3.4 Expenditures by programme

Funds from different agencies are used in different ways. Figure 6.8 gives a breakdown of government expenditure in 28 countries for which there were reports of how government financing for malaria was used in 2008. Each country is weighted equally. The breakdown of expenditures for any one country depends on factors that include the epidemiological situation, the level of external financing, the level of support from subnational administrative bodies and the level of health system development. The graph conceals wide variation among countries (e.g. countries in the South-East Asia Region appear to devote more resources to antimalarial medicines) but illustrates how government financing frequently covers the fixed costs of operating malaria programmes, including human resources and programme management (such as information systems, planning workshops and supervision). Figure 6.8 also shows that funds supplied by the Global Fund and the United States President's Malaria Initiative are often used to finance variable costs, such as the provision of commodities and their distribution.

The ratio of expenditures for vector control programmes to case management programmes is 1.11 for government financing, 1.34 for the Global Fund and 1.99 for the United States President's Malaria Initiative. The differences in ratios between funding sources may be due partly to differences in country representation, as the President's Malaria Initiative is limited to Africa. The projected ratio of funds required for vector control to case management in the Global Malaria Action Plan was 3.8 in 2009 and 2.9 in 2010, suggesting that more spending on vector control programmes is required.

6.4 Relations between external financing, programme implementation and disease trends

6.4.1 Disbursements and programme implementation

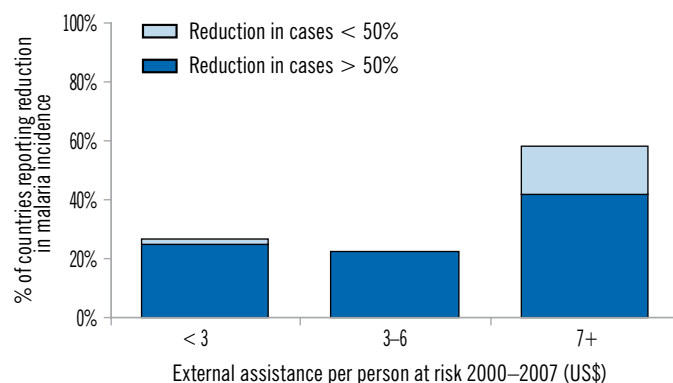
Figure 6.9 shows the numbers of nets procured between 2004 and 2008 per person at risk for malaria versus the amount of external assistance disbursed per head in the African Region between 2003 and 2007. It suggests that some countries that receive higher levels of external assistance per capita (Djibouti, Sao Tome and Principe) have been able to procure more nets per head of population than countries with lower funding ratios (Côte d'Ivoire, Nigeria). It also suggests that some countries have procured more nets per head of population than would be expected given the level of external assistance provided (Congo, Mali), possibly because of use of domestic resources, cost savings (e.g. using volunteers in mass campaigns) or gaps in the data. Other countries appear to have procured fewer nets than expected (Comoros, Swaziland, United Republic of Tanzania), perhaps because external assistance was targeted to other programmes, such as IRS or diagnosis and treatment, less efficient use of funds or gaps in the data on net procurement.

As information on net procurement and deliveries outside Africa is less complete, a similar analysis could not be undertaken. It would be informative to examine procurements of other commodities, such as RDTs and ACTs, but complete databases are not available.

6.4.2 Disbursements and malaria disease trends

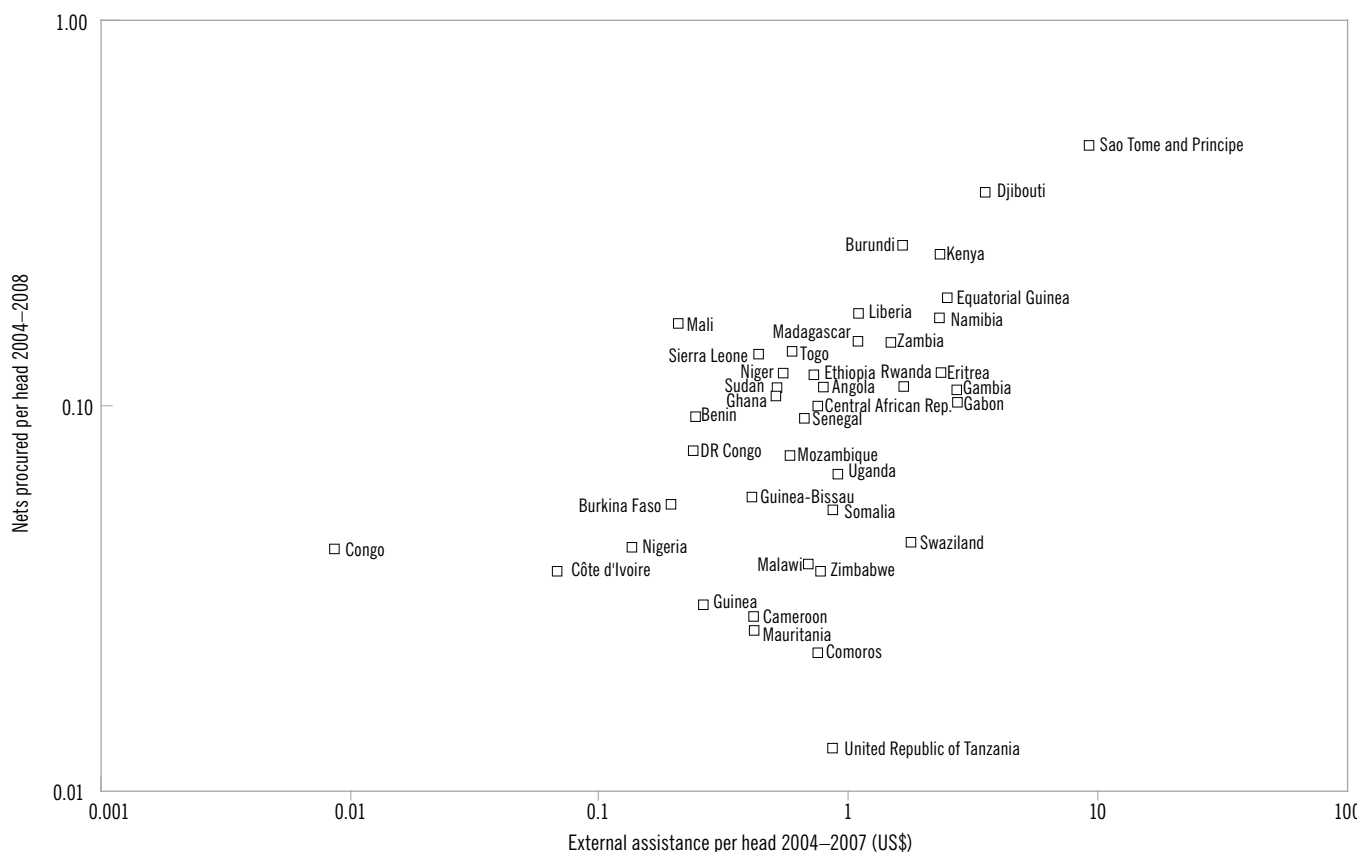
Figure 6.10 shows the relation between disbursements by external agencies per capita between 2000 and 2007 and evidence for a decrease in the burden of malaria, as highlighted in Chapter 4 of this Report. Approximately 60% of countries receiving more than US\$ 7 per person at risk reported a reduction in the number of cases of malaria since 2000, whereas only 26% of countries receiving US\$ 7 or less reported reductions. Although few (10) countries received

Figure 6.10 Relation between external assistance disbursed in 2000–2007 per person at risk for malaria and decrease in malaria cases, 2000–2008



Sources: Disbursements: Institute for Health Metrics and Evaluation database with amendments to disbursements by the United States President's Malaria Initiative and the World Bank; trends in cases: reports from malaria-endemic countries to WHO

Figure 6.9 Relation between disbursements by external agencies for malaria control and nets procured by endemic countries



Source: Disbursements: Institute for Health Metrics and Evaluation database with amendments to disbursements by the United States President's Malaria Initiative and the World Bank; nets procured: records of the Alliance for Malaria Prevention, updated March 2009

such a high level of assistance, the observation suggests that high levels of external assistance per person at risk for malaria are associated with decreases in the incidence of malaria.

While success in reducing the incidence of malaria is seen in some countries with high levels of external assistance (Eritrea, Georgia, Sao Tome and Principe, Suriname, Solomon Islands and Vanuatu), evidence is lacking for others (e.g. Djibouti, Equatorial Guinea⁸ and Gabon), perhaps because control programmes are implemented less than optimally or because of other factors that reduce the impact of malaria control, such as unfavourable climate conditions. It may also be due to deficient surveillance systems that are unable to detect change because of inconsistent reporting or reliance on suspected rather than confirmed cases.

Some countries with less external assistance per capita have reported success in reducing the number of cases of malaria. These tend to be richer countries with better developed malaria programmes, which probably receive more domestic resources per head. Alternatively, some investments in health systems strengthening that affect malaria may not have been captured in this analysis. While high levels of funding may be responsible for decreases in malaria incidence, funding agencies may tend to place funds in countries where success is more likely or has already been demonstrated.

Conclusions

The funds committed to malaria control from international sources have increased substantially, from around US\$ 0.3 billion in 2003 to US\$ 1.7 billion in 2009. The massive increase is due primarily to the emergence of the Global Fund and greater commitments to malaria control by the United States President's Malaria Initiative, UNITAID, the World Bank and a range of bilateral agencies.

Disbursements to malaria-endemic countries are less than the amounts committed; about US\$ 0.65 billion were disbursed to malaria-endemic countries in 2007, the latest year for which comprehensive data are available. Approximately 80% of funds disbursed were targeted to the WHO African Region, which accounts for about 30% of the population at risk and 90% of global cases and deaths. The South-East Asia Region received the least money per person at risk for malaria and saw the smallest increase in disbursements from external financing between 2000 and 2007.

Contributions from national governments are more difficult to establish. Domestic financing for malaria has increased in many countries in all regions, although there may have been decreases between 2007 and 2008 in two regions, and there was a steady decrease in the South-East Asia Region between 2005 and 2008.

While the increases in funds have been substantial, the current level of financing does not yet meet the estimated requirements for successful control of malaria and for reaching the MDG of more than US\$ 5 billion per year.

The limited funds for malaria control appear to be disproportionately focused on smaller countries with lower disease burdens. There is evidence that high levels of external assistance are associated with decreases in malaria incidence, but positive trends are seen primarily in countries with low disease burdens, where success is more easily achieved.

Countries that substantially reduce the burden of malaria cases can face difficulties in justifying continued investment in malaria control. Continued or increased support is, however, critical to protect current achievements and move towards elimination. Financing of malaria programmes is also placed at risk by the global financial crisis. A prolonged recession could force shelving of elimination plans in many countries and jeopardize the fragile progress made in malaria control.

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⁸ Large reductions in mortality among children under 5 years were observed on Bioko Island after intensified vector control and improved access to treatment, but such success has not yet been reported elsewhere in Equatorial Guinea.