

CHAPTER 3

Financing TB control

Implementing the Stop TB Strategy at the scale required to achieve the MDG, Stop TB Partnership and World Health Assembly targets for global TB control (see also [Chapters 1 and 2](#)) requires accurate budgeting of the financial resources required, mobilization of the necessary funding and spending of available money such that TB control outcomes are improved. Analysis of budgets and funding for TB control was introduced into the annual WHO report on global TB control in 2002, and expenditures have been reported on since 2004.

In this report, we provide our latest assessment of financing for TB control. As with the previous two chapters, emphasis is given to the 22 HBCs, but analyses for all countries that have reported financial data are included. The chapter is structured in eight major sections, which are:

- *Data reported to WHO in 2007.* This section describes the number of countries that reported financial data and the share of the global number of TB cases accounted for by these countries.
- *NTP budgets, available funding and funding gaps.* This section analyses changes in NTP budgets in HBCs for the period 2002–2008, including presentation of budgets broken down by funding source and line item.
- *Total costs of TB control.* This section estimates the total costs of TB control, which include the resources used for diagnosis of TB and treatment of patients within the general health-care system (e.g. primary health-care staff and infrastructure) as well as the costs included in NTP budgets. Total costs in the years 2002–2008 are estimated for HBCs, and for all countries by WHO region in 2008.
- *Comparisons with the Global Plan.* In this section, total funding requirements for TB control based on country reports are compared with the total funding requirements estimated in the Global Plan. This is done for the period 2006–2008 for HBCs, and for 2008 for all countries.
- *Per patient costs and budgets.* Using the total budget and cost data provided in earlier sections of this chapter and forecasts of patients to be treated in 2008, this section provides a summary of per patient budgets and costs in each HBC in 2008.
- *Expenditures compared with available funding and changes in cases treated.* This section investigates the extent to which available funding was spent in 2006, as well as the relationship between changes in funding for TB control and changes in the number of new cases detected and treated in DOTS programmes.
- *The Global Fund contribution to TB control.* With the Global Fund the largest single source of donor financing for TB control, this section includes the latest data on its contribution to funding for TB control.
- *How can funding gaps for TB control be closed?* This section discusses why funding gaps for TB control persist. It gives particular attention to the resources available from the Global Fund, and what is needed to close the gap between currently available funding and the funding needs set out in the Global Plan.

Further details about the financing of TB control in the 22 HBCs are provided in [Annex 1](#).

3.1 Data reported to WHO in 2007

Financial data were received from 156 out of 212 (74%) countries and territories ([Table 3.1](#)), similar to the number that reported data in 2006.¹ Complete budget data for 2007 were provided by 94 countries (up from 87 for 2007 in last year's report), 90 countries provided complete budget data for 2008, and 80 provided complete expenditure data for 2006 (compared with 83 that provided complete expenditure data for 2005). The countries that provided financial reports accounted for 99% of the regional burden of TB in four WHO regions, with lower figures of 93% and 88% for the African and European regions respectively. Overall, countries that reported financial data account for 97% of the global burden of TB.

Data were received from all 22 HBCs ([Table 3.2](#)). Complete budget data for 2007 were provided by 20 countries (the exceptions were Thailand and the United Republic of Tanzania), and complete budget data for 2008 were provided by 21 countries (the exception was Thailand). It is now five years since the NTP in Thailand reported complete budget data, reflecting a decentralized system

¹ *Global tuberculosis control: surveillance, planning and financing.* Geneva, World Health Organization, 2007 (WHO/HTM/TB/2007.376).

TABLE 3.1

Budget, expenditure and utilization data received, all countries, 2008

	NUMBER OF COUNTRIES	FINANCIAL REPORTS RECEIVED	BUDGET 2007			BUDGET 2008			EXPENDITURE 2006			UTILIZATION OF HEALTH SERVICES	PROP. OF ESTIMATED REGIONAL TB INCIDENCE ACCOUNTED FOR BY COUNTRIES THAT REPORTED FINANCIAL DATA (%)
			COMPLETE	PARTIAL	NONE	COMPLETE	PARTIAL	NONE	COMPLETE	PARTIAL	NONE		
AFR	46	39	30	5	4	29	3	7	25	3	11	29	93
AMR	44	27	14	6	7	14	5	8	11	7	9	16	99
EMR	22	20	13	3	4	12	2	6	11	4	5	14	99
EUR	53	30	12	8	10	13	5	12	12	7	11	15	88
SEAR	11	10	8	2	0	8	1	1	8	1	1	6	99
WPR	36	30	17	5	8	14	8	8	13	4	13	17	99
Global	212	156	94	29	33	90	24	42	80	26	50	97	97

TABLE 3.2

Budget, expenditure and utilization data received, high-burden countries, 2008

	NUMBER OF COUNTRIES	FINANCIAL REPORTS RECEIVED	BUDGET 2007			BUDGET 2008			EXPENDITURE 2006		UTILIZATION OF HEALTH SERVICES
			COMPLETE	PARTIAL	NONE	COMPLETE	PARTIAL	NONE	COMPLETE	NONE	
AFR	9	9	8	1 ^a	0	9	0	0	7	2 ^b	9
AMR	1	1	1	0	0	1	0	0	1	0	1
EMR	2	2	2	0	0	2	0	0	2	0	2
EUR	1	1	1	0	0	1	0	0	1	0	1
SEAR	5	5	4	1 ^c	0	4	1 ^c	0	4	1 ^c	4 ^c
WPR	4	4	4	0	0	4	0	0	4	0	4
Global	22	22	20	2	0	21	1	0	19	3	21

^a UR Tanzania.

^b Mozambique and Uganda.

^c Thailand.

in which financial data are not reported to or aggregated by the central unit of the NTP. For the past two years, the NTP in South Africa has demonstrated how this difficulty can be addressed. Until 2006, it also did not report financial data to WHO, as information was not reported to the central unit by any of the country's nine provinces. In 2006, the NTP manager sent the WHO data collection form to each of the country's nine provinces, allowing an aggregated report to be prepared. In 2007 this process was further strengthened, including via a planning and budgeting workshop at which provincial teams set out their plans and budget requirements for the period 2007–2011.

Complete expenditure data for 2006 were provided for 19 countries, with data missing for two African countries (Mozambique and Uganda) and Thailand. A total of 21 countries provided data on the utilization of health services and made projections of the number of patients who would be treated in 2007 and 2008.

Considerable clarification and verification of financial data by WHO are still required, but the quality of the data when first submitted continues to improve. This was especially the case for the African Region in 2007, probably facilitated by related work on planning and budgeting undertaken with 35 countries in the region in 2007 (see also section 3.4.3 below). Among HBCs, Brazil, the Democratic Republic of the Congo, Indonesia, Kenya, Myanmar and South Africa stood out as providing timely data that required almost no follow-up.

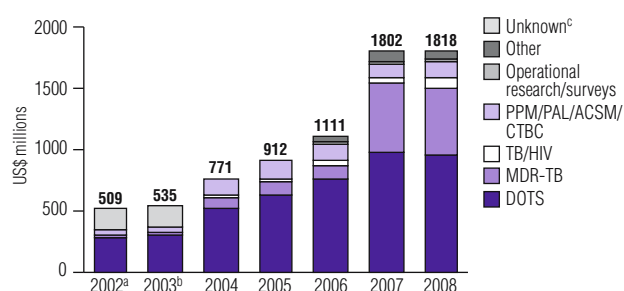
3.2 NTP budgets, available funding and funding gaps

3.2.1 High-burden countries, 2002–2008

NTP budgets in 21 of the 22 HBCs have increased during the period 2002–2008, often by substantial amounts, but have stagnated in all but five countries (Brazil, Ethiopia, Mozambique, Nigeria and the United Republic of Tanzania) between 2007 and 2008 (Figures 3.1 and Figure 3.2; Table 3.3; Annex 1). There are insufficient data to make an assessment for Thailand. The total combined budget for the 22 HBCs in 2008 is US\$ 1.8 billion, almost four times the US\$ 509 million budgeted for in 2002, but just US\$ 16 million higher than in 2007. The Russian Federation has by far the largest budget (US\$ 722 million), followed by South Africa (US\$ 352 million), China (US\$ 225 million), India (US\$ 67 million) and Brazil (US\$ 64 million). These five countries account for 81% of the NTP budgets reported for 2008 by 21 HBCs. Three countries have budgets of around US\$ 50 million (Indonesia, Nigeria and the United Republic of Tanzania), followed by Kenya with a budget of US\$ 33 million. The remaining 13 HBCs have budgets of US\$ 25 million or less in 2008.

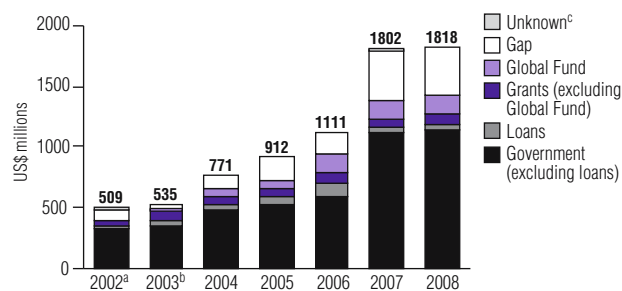
In absolute terms, the budgetary increase in the Russian Federation far exceeds that in any other HBC, at US\$ 560 million since 2002. The second largest increase is in South Africa (US\$ 289 million), following comprehensive planning and budgeting for all components of the Stop TB Strategy during 2007, and likely more accu-

FIGURE 3.1
Total NTP budgets by line item, high-burden countries, 2002–2008



- a Estimates assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
b Estimates assume budget 2003 equal to expenditure 2003 (Russian Federation and Zimbabwe) or budget 2004 (Thailand).
c "Unknown" applies to Afghanistan 2002–2004, Russian Federation 2002–2003 and Mozambique 2002–2003 as breakdown by line item not available.

FIGURE 3.2
Total NTP budgets by source of funding, high-burden countries, 2002–2008



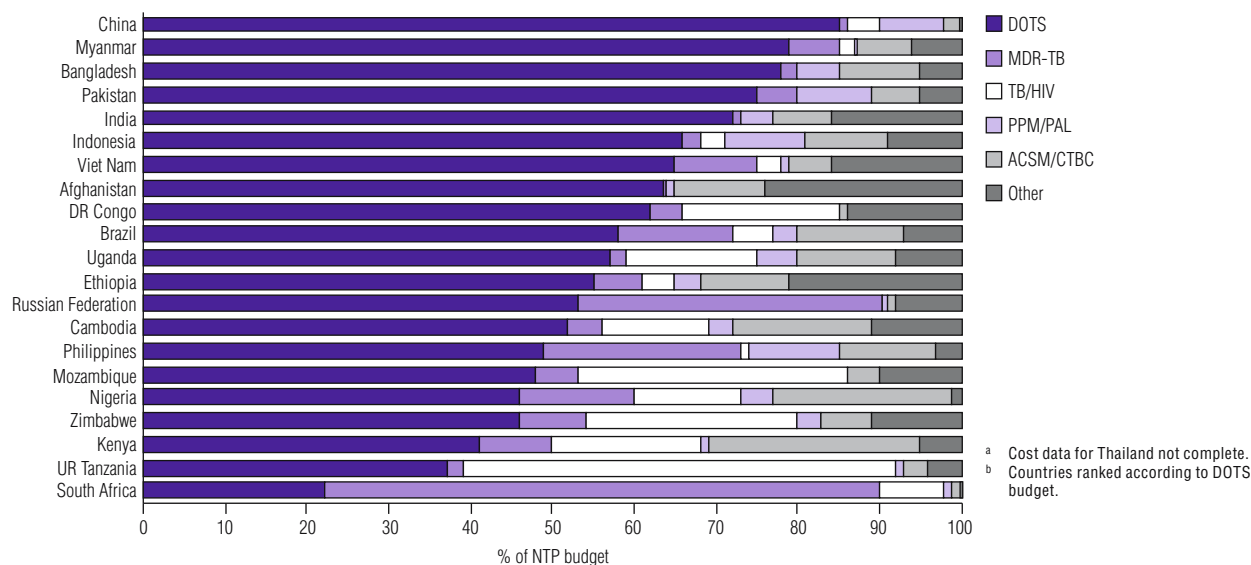
- a Estimates assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
b Estimates assume budget 2003 equal to expenditure 2003 (Russian Federation and Zimbabwe) or budget 2004 (Thailand).
c "Unknown" applies to Afghanistan 2004, DR Congo 2002, Nigeria 2002 and UR Tanzania 2007, as breakdown by funding source not available.

TABLE 3.3
NTP budgets and available funding, high-burden countries, 2008

	TOTAL NTP BUDGET (US\$ MILLIONS)	CHANGE SINCE 2002 ^a (US\$ MILLIONS)	CHANGE SINCE 2002 (%)	AVAILABLE FUNDING (US\$ MILLIONS)				FUNDING GAP (US\$ MILLIONS)	CHANGE IN AVAILABLE FUNDING SINCE 2002 (US\$ MILLIONS)				CHANGE IN FUNDING GAP SINCE 2002 (US\$ MILLIONS)
				GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GLOBAL FUND)	GLOBAL FUND		GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GLOBAL FUND)	GLOBAL FUND	
1 India	67	31	86	7.7	31	8.3	20	0	1.4	6.7	2.8	20	0
2 China	225	127	130	139	13	0.7	20	53	86	13	-1.8	20	9.5
3 Indonesia	57	23	66	23	0	13	21	0	17	0	10	21	-25
4 South Africa	352	289	459	350	0	1.8	0	0	292	0	0.2	-3.6	0
5 Nigeria	49	37	290	5.8	0	2.2	11	30	3.9	0	-1.9	11	23
6 Bangladesh	17	10	149	3.0	0.6	0.9	13	0	-0.4	0	-2.6	13	0
7 Ethiopia	17	12	249	0.6	0	4.4	12	0	-0.5	0	0.6	12	0
8 Pakistan	25	19	359	10	0	0	6.2	8.3	7.1	0	-0.7	6.2	6.7
9 Philippines	18	1.9	11	8.2	0	0.1	8.0	2.0	-3.8	0	0.1	8.0	-2.4
10 DR Congo	21	10	98	1.6	0.8	5.7	7.9	4.6	0.6	0.8	0	7.9	0.9
11 Russian Federation	722	560	346	501	33	5.0	30	153	347	33	-2.6	30	153
12 Viet Nam	15	3.1	27	7.1	0	3.5	3.5	0.4	-1.6	-2	2.5	3.5	0.4
13 Kenya	33	28	538	1.6	0	12	5.6	15	0.02	0	9.1	5.6	13
14 UR Tanzania ^b	52	47	844	4.2	0	17	20	11	4.0	0	12	20	10
15 Uganda	13	8	150	0.5	0	0.5	3.7	8.4	0.4	-1.2	-0.1	3.7	5.1
16 Brazil	64	50	371	41	0	0	6.1	16	28	0	0	6.1	16
17 Mozambique	19	11	134	2.0	0	9.4	5.1	2.2	1.7	0	7.0	5.1	-3.1
18 Thailand ^c	8.8	–	–	5.6	0	0	1.4	1.8	–	–	–	–	–
19 Myanmar	14	11	384	1.0	0	2.6	0	10	0.6	0	2.4	0	7.7
20 Zimbabwe	6.4	4.7	279	1.4	0	1.7	1.9	1.4	1.3	0	0.1	1.9	1.4
21 Cambodia	9.0	4.7	109	0.6	0	1.5	2.2	4.8	-0.7	-0.7	0.3	2.2	3.6
22 Afghanistan	15	12	395	0.1	0	7.5	0.9	6.8	-0.2	0	6.2	0.9	5.3
High-burden countries	1818	1299	249^d	1116	78	97	200	328	784	50	44	195	227

- Indicates not available.
a Figures assume budget 2002 equal to expenditure 2002 (Ethiopia), budget 2003 (Afghanistan, Bangladesh, Mozambique and Uganda) or expenditure 2003 (Russian Federation and Zimbabwe).
b For US\$ 23 million of the available funding the exact split between the Global Fund and grants from other donors is not known. This table assumes a 50/50 split.
c Data for Thailand are partial.
d Median value.

FIGURE 3.3
NTP budgets by line item, 21 high-burden countries,^{a,b} 2008



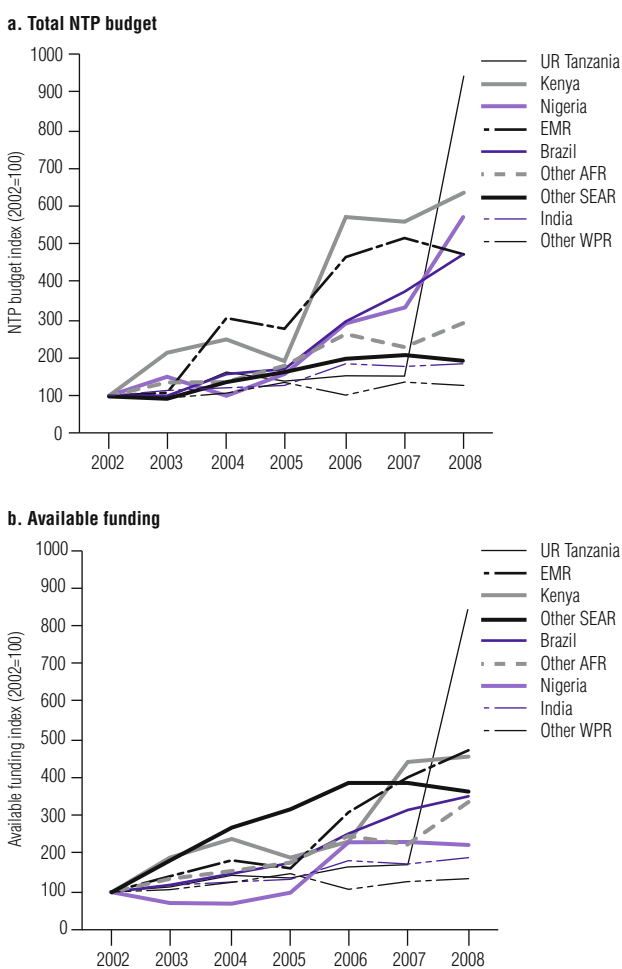
rate budgeting for individual provinces than was possible in previous years. In both countries, large budgets for the diagnosis and treatment of MDR-TB are particularly striking (Figure 3.3). The Russian Federation and South Africa account for most of the amount that has been budgeted for MDR-TB across HBCs (US\$ 506 million out of a total of US\$543 million, equivalent to 93%).

In relative terms, the most striking budgetary increase is the 844% increase reported by the United Republic of Tanzania (Figure 3.4a; Table 3.3). This larger figure follows a planning and budgeting process that was completed in late 2007. The plan for 2008–2012 covers all elements of the Stop TB Strategy, is in line with Global Plan targets and includes a comprehensive assessment of the budget required for collaborative TB/HIV activities (both those funded and provided through the NTP and those funded and provided through the national AIDS control programme). This has brought the budget developed by the NTP to a level very comparable to that estimated in the Global Plan (see also section 3.4.1 below and Annex 1). If the budget for collaborative TB/HIV activities likely to be funded and managed by the national AIDS control programme is removed, the budget in the United Republic of Tanzania is approximately halved.

Other countries with large relative increases in their NTP budgets over the past seven years include Afghanistan, Brazil, Myanmar, Nigeria, Pakistan and South Africa. Countries with noticeably small increases in their budgets since 2002 are the Philippines and Viet Nam, reflecting the fact that both countries had already reached, or were close to achieving, the global targets for TB control in 2002.

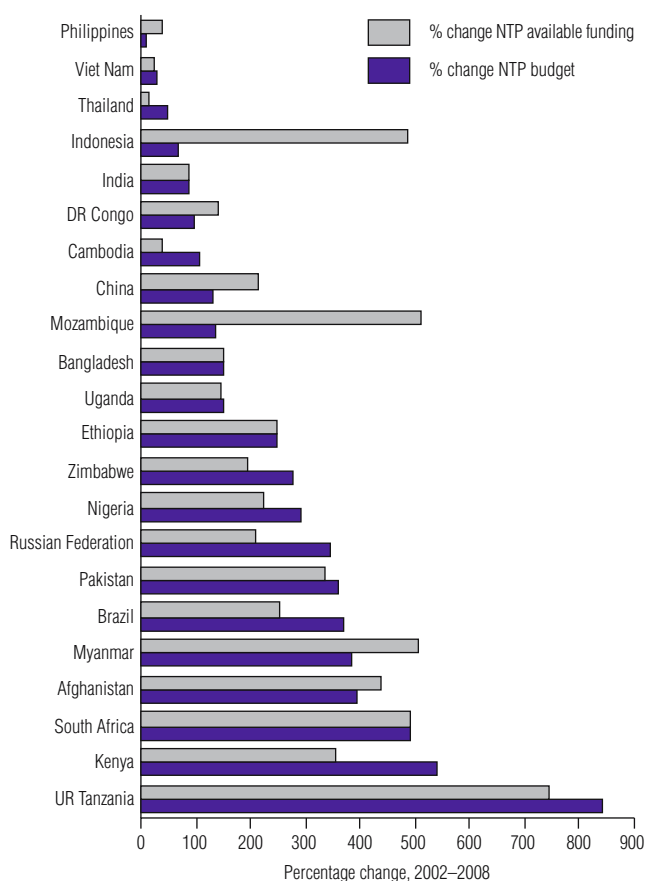
DOTS accounted for easily the largest proportion of NTP budgets between 2002 and 2006, and in 2008 continues to account for much the largest share of the NTP budget in all of the 22 HBCs except the Russian Federa-

FIGURE 3.4
Trends in NTP budgets and funding, 19 high-burden countries,^a 2002–2008



^a China, the Russian Federation and South Africa were excluded since patterns are clear from other figures and tables.

FIGURE 3.5
Changes in NTP budget and available funding, 21 high-burden countries, ^{a,b} 2002–2008



^a Cost data for Thailand not complete.
^b Countries ranked by percentage change in NTP budget.

tion, South Africa and the United Republic of Tanzania (Figure 3.1; Figure 3.3).¹ In contrast to earlier years, a much larger proportion (around 30%) of total NTP budgets across all HBCs is accounted for by diagnosis and treatment of MDR-TB in 2007 and 2008, with the Russian Federation and South Africa accounting for just over US\$ 500 million of the total of US\$ 540 million. Collaborative TB/HIV activities remain a comparatively small component of NTP budgets for the HBCs as a whole, but account for more than 50% of the budget reported by the NTP in the United Republic of Tanzania and for a relatively large proportion of the budgets reported by several other African countries including the Democratic Republic of the Congo, Kenya, Mozambique, Uganda and Zimbabwe (see also section 3.4.1 and Annex 1). High costs for collaborative TB/HIV activities in the United Republic of Tanzania follow a comprehensive costing analysis, as noted above.

The large budget increases described above have been accompanied by big improvements in available funding (Figure 3.2, Figure 3.4b, Figure 3.5; Table 3.3). For all HBCs, funding for NTP budgets has increased by just over US\$ 1

billion since 2002, reaching US\$ 1.4 billion of the US\$ 1.8 billion needed in 2008. Funding has also increased in all individual HBCs, although the increases range from less than US\$ 5 million in six countries (Cambodia, Myanmar, the Philippines, Uganda, Viet Nam and Zimbabwe) to around US\$ 100 million in China, around US\$ 300 million in South Africa and around US\$ 400 million in the Russian Federation. As with NTP budgets, however, funding has stagnated between 2007 and 2008.

The extra US\$ 1 billion of funding for NTPs in HBCs in 2008 (compared with 2002) has come mostly from HBC governments (including loans). This extra domestic funding amounts to US\$ 0.8 billion (Table 3.3, columns 10–13) in total, an overall statistic that conceals the fact that most of the additional domestic funding has come from four countries only: Brazil, China, the Russian Federation and South Africa (an extra US\$ 799 million including loans in 2008, compared with 2002). In other HBCs, increases in funding have come primarily from the Global Fund in 12 HBCs, from a combination of the Global Fund and grant funding in Indonesia, Kenya, Mozambique, and Pakistan, and mainly from donors other than the Global Fund in Afghanistan and Myanmar. Funding from the Global Fund in 2008 amounts to US\$ 200 million compared with zero in 2002, and all HBCs except Myanmar have Global Fund grants. In relative terms, the most impressive improvements in funding overall (from all sources) have occurred in Indonesia, Mozambique, Myanmar, South Africa and the United Republic of Tanzania (Figure 3.5).

Among all HBCs, national governments will provide US\$ 1194 million (66%) of the funding required by NTPs in 2008 and US\$ 297 million (16%) will be funded by donor agencies (Table 3.3). This leaves a reported funding gap of US\$ 328 million (18%). In absolute terms, the largest funding gaps are those reported by Brazil, China, Nigeria and the Russian Federation (US\$ 252 million, or 77% of the total reported gap). Proportionally, the largest gaps are in Afghanistan, Cambodia, Kenya, Myanmar, Nigeria, Pakistan, the Russian Federation and Uganda (with gaps representing 31–73% of the required budget). Only five HBCs reported no funding gap, or a negligible funding gap: Bangladesh, Ethiopia, India, Indonesia and South Africa.

3.2.2 All countries by region, 2008

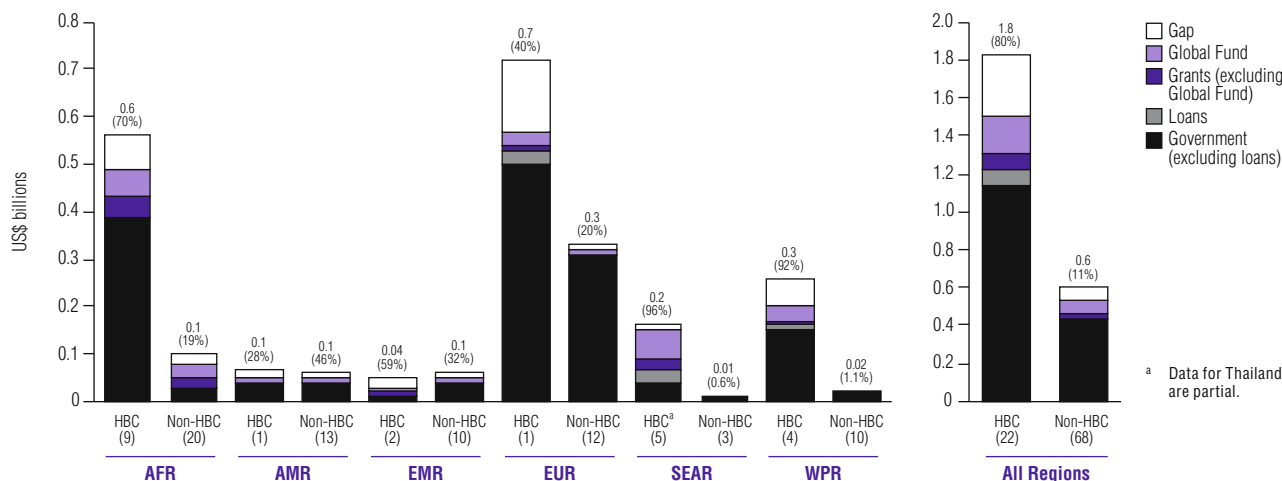
Data for all countries (in addition to the 22 HBCs) began to be collected in 2003 and were reported for the first time in 2004. There is variation in the set of countries that report complete data each year, making presentation of needs for all countries over time difficult. For this reason, Figure 3.6 presents NTP budgets by source of funding for 2008 only. In 2008, 90 countries (22 HBCs and 68 other countries) submitted complete financial data. Globally, these countries account for 91% of TB cases (up from 90% in 2007); at regional level, they account for almost all TB cases in the African, Eastern Mediterranean, South-East

¹ See Annex 2 for a definition of the budgetary line items included in the category DOTS.

FIGURE 3.6

Regional distribution of NTP budgets by source of funding, 22 high-burden countries and 68 non high-burden countries, 2008.

Numbers in parentheses above bars show the percentage of all estimated TB cases in the region accounted for by the countries included in the bar. Numbers below the bars show the number of countries contributing to each bar.



^a Data for Thailand are partial.

Asia and Western Pacific regions (89–97% depending on the region), for 74% of the regional total in the Region of the Americas, and for 60% of the regional total in the European Region.

NTP budgets in 2008 in these 90 countries total US\$ 2.4 billion, up from US\$ 1.6 billion in 2007 for countries accounted for 91% of TB cases globally, with a funding gap of US\$ 385 million (also higher than the US\$ 307 million gap reported in 2007).

Budgetary funding gaps as a proportion of the total budget were similar for HBCs and non-HBCs in the Region of the Americas and the Eastern Mediterranean Region, and much lower or non-existent in non-HBCs in the European, South-East Asia and Western Pacific regions. It is only in the African Region that funding gaps represent a higher share of the budget required in non-HBCs. Overall, NTP budgets per TB case (estimated annual incidence) were higher for HBCs compared with non-HBCs in the African Region, the European Region and the Region of the Americas, and much lower for HBCs compared with non-HBCs in the Eastern Mediterranean, South-East Asia and Western Pacific regions.

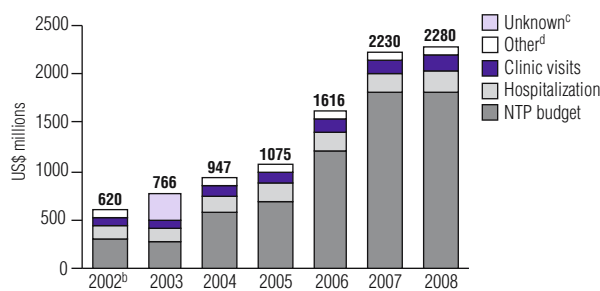
3.3 Total costs of TB control

3.3.1 High-burden countries, 2002–2008

NTP budgets include only part of the resources needed for TB control. In particular, they do not include the costs associated with general health-service staff and infrastructure, which are used when TB patients are hospitalized or make outpatient clinic visits for DOT and monitoring. For the 22 HBCs combined, the total cost of TB control is projected to be almost US\$ 2.3 billion in 2008, compared with US\$ 0.6 billion in 2002 (Figures 3.7–3.9; Table 3.4). As with NTP budgets, the total cost of TB control is expected to stagnate between 2007 and 2008, except in five countries (Brazil, Ethiopia, Mozambique, Nigeria and the United Republic of Tanzania).

FIGURE 3.7

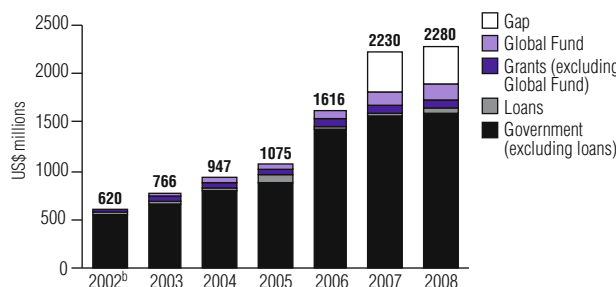
Total TB control costs by line item, high-burden countries,^a 2002–2008



^a Total TB control costs for 2002–2006 are based on expenditure data, whereas those for 2007–2008 are based on budget data.
^b Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Uganda and Zimbabwe.
^c "Unknown" applies to Russian Federation 2003 and Thailand 2002–2006.
^d "Other" includes costs for hospitalization and fluorography in the Russian Federation not reflected in NTP budget or NTP expenditure data.

FIGURE 3.8

Total TB control costs by source of funding, high-burden countries,^a 2002–2008



^a Total TB control costs for 2002–2006 are based on expenditure data, whereas those for 2007–2008 are based on budget data.
^b Estimates assume costs 2002 equal to costs 2003 for Afghanistan, Bangladesh, Mozambique, Nigeria, Uganda and Zimbabwe.

TABLE 3.4
Total TB control costs and available funding, high-burden countries, 2008

	TOTAL COSTS (US\$ MILLIONS)	CHANGE SINCE 2002 ^a (US\$ MILLIONS)	CHANGE SINCE 2002 (%)	AVAILABLE FUNDING (US\$ MILLIONS)				FUNDING GAP (US\$ MILLIONS)	CHANGE IN AVAILABLE FUNDING SINCE 2002 (US\$ MILLIONS)				CHANGE IN FUNDING GAP SINCE 2002 (US\$ MILLIONS)
				GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GLOBAL FUND)	GLOBAL FUND		GOVERNMENT (EXCL. LOANS)	LOANS	GRANTS (EXCL. GLOBAL FUND)	GLOBAL FUND	
1 India	111	48	78	52	31	8.3	20	0	12	13	3.4	20	0
2 China	225	164	269	139	13	0.7	20	53	82	12	-2.6	20	53
3 Indonesia	62	41	199	28	0	13	21	0	9.2	0	11	21	0
4 South Africa	538	374	228	536	0	1.8	0	0	378	0	0.2	-3.6	0
5 Nigeria	80	70	717	36	0	2.2	11	30	30	0	-1.6	11	30
6 Bangladesh	24	13	129	9.3	0.6	0.9	13	0	2.5	0	-2.6	13	0
7 Ethiopia	29	21	304	12	0	4.4	12	0	9.1	0	0.6	12	0
8 Pakistan	28	23	465	13	0	0	6.2	8.3	10	0	-1.2	6.2	8.3
9 Philippines	28	6.2	28	18	0	0.1	8.0	2.0	-1.2	-2.2	-0.4	8.0	2.0
10 DR Congo	30	18	154	11	0.8	5.7	7.9	4.6	5.6	0.8	-0.4	7.9	4.6
11 Russian Federation	811	669	473	590	33	5.0	30	153	449	33	5.0	30	153
12 Viet Nam	25	6.7	36	18	0	3.5	3.5	0	1.5	-1.8	3.0	3.5	0.4
13 Kenya	35	30	555	3.3	0	12	5.6	15	0.5	0	9.1	5.6	15
14 UR Tanzania ^b	58	46	419	9.5	0	17	20	11	3.1	0	12	20	11
15 Uganda	14	11	386	1.1	0	0.5	3.7	8.4	0.1	-1.2	-0.1	3.7	8.4
16 Brazil	95	57	147	73	0	0	6.1	16	34	0	0	6.1	16
17 Mozambique	25	21	528	7.8	0	9.4	5.1	2.2	5.1	-0.8	9.1	5.1	2.2
18 Thailand ^c	8.8	–	–	5.6	0.0	0.0	1.4	1.8	–	–	–	–	–
19 Myanmar	15	12	403	2.8	0	2.6	0	10	0.6	0	1.7	0	10
20 Zimbabwe	11	5.5	92	6.3	0	1.7	1.9	1.4	2.0	0	0.1	1.9	1.4
21 Cambodia	11	6.5	133	3.0	0	1.5	2.2	4.8	0.2	-0.7	0	2.2	4.8
22 Afghanistan	17	15	942	1.4	0	7.5	0.9	6.8	1.1	0	6.2	0.9	6.8
High-burden countries	2280	1660	269^d	1578	78	97	200	328	1033	53	53	195	326

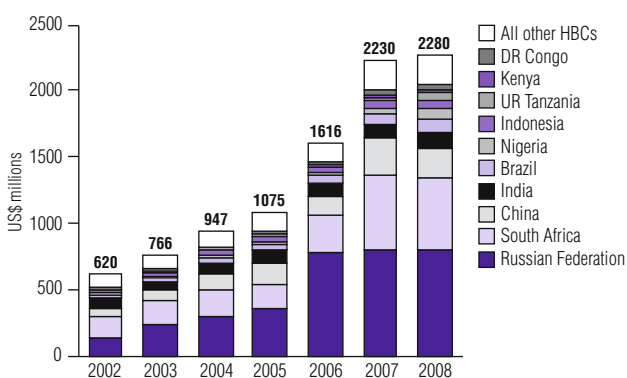
– Indicates not available.

^a TB control costs for 2007–2008 were estimated using budget data, whereas those for 2002–2006 were estimated using expenditure rather than budget data wherever possible. Estimates assume expenditure 2002 equal to available funding 2002 (Kenya and UR Tanzania), to expenditure 2003 (Afghanistan, Bangladesh, Mozambique, Nigeria and Zimbabwe) or to available funding 2003 (Uganda).

^b For US\$ 23 million of the available funding the exact split between the Global Fund and grants from other donors is not known. This table assumes a 50/50 split.

^c Data for Thailand are partial.

^d Median value.

FIGURE 3.9
Total TB control costs by country, high-burden countries,^a 2002–2008


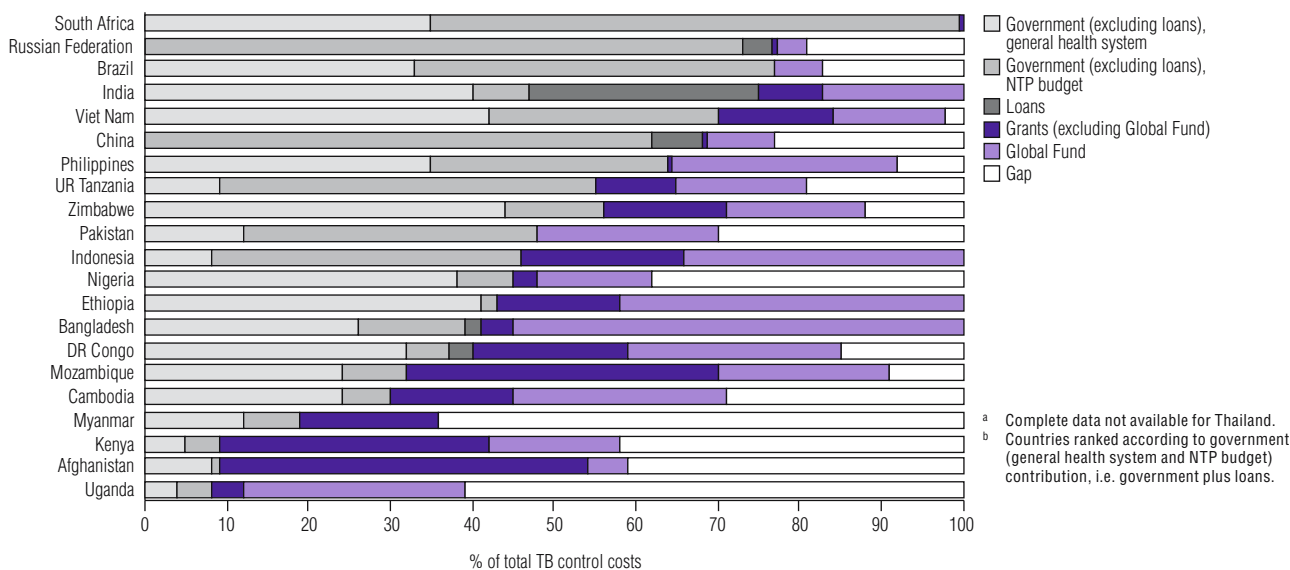
^a Total TB control costs for 2002–2006 are based on expenditure data, whereas those for 2007–2008 are based on budget data.

Increases in projected costs during the period 2002–2008 arise because of the large increases in NTP budgets (described above) and, to a much lesser extent, because of the higher costs of clinic visits and hospitalization that are associated with treating more patients. As in previous years, the largest costs in 2008 are for the Russian Federation and South Africa, which together account for US\$ 1.3 billion (59%) of the total of US\$ 2.3 billion (Figure 3.9; Table 3.4). China (US\$ 225 million), India (US\$ 111 million), Brazil (US\$ 95 million) and Nigeria (US\$ 80 million) rank third to sixth. These six countries account for 82% of the total cost of TB control in the 22 HBCs in 2008. Of the remaining countries, 13 have costs of US\$ 30 million or less in 2008, while three (Indonesia, Kenya, the United Republic of Tanzania) have costs in the range US\$ 35 million to US\$ 62 million (Table 3.4, column 2). The countries with by far the largest projected absolute increases in annual costs between 2002 and 2008 are the Russian Federation and South Africa, followed by China (Figure 3.9; Table 3.4).

In South Africa, there are two major reasons for the high cost of TB control anticipated in 2008. Firstly, the costs associated with general district hospital and specialized TB hospital infrastructure are relatively high, due to the number of beds (approximately 8000 across the country's nine provinces) as well as a unit price per bed-day that is higher in South Africa than in

FIGURE 3.10

Sources of funding for total TB control costs, 21 high-burden countries, ^{a,b} 2008



most other HBCs (around US\$ 40 per day in TB hospitals to over US\$ 100 in general district hospitals, reflecting the higher unit costs associated with a middle-income country). Secondly, there is a large budget for the diagnosis and treatment of MDR-TB (see also [Annex 2](#) and section 3.2 above). The largest components of the budget for MDR-TB in 2008 are renovation and construction of infrastructure in line with a new national policy of hospitalizing all patients with MDR-TB for at least six months, improvement of infection control in MDR-TB and XDR-TB units as well as in general district hospitals and provision of second-line anti-TB drugs for the enrolment of around 5000 patients on treatment.

High costs in the Russian Federation in 2008 reflect continued staffing and maintenance of an extensive network of TB hospitals and sanatoria, a large budget for second-line anti-TB drugs to treat many MDR-TB patients (US\$ 267 million, with an estimated total of about 24 000 cases to be enrolled on treatment in 2008; see also [Figure 3.3](#) and [Chapter 2](#)) and continued use of fluorography for mass population screening.

Funding for the general health-service staff and infrastructure used by TB patients during clinic visits and hospitalization is assumed to be provided by governments (see also [Annex 2](#)). This assumption, together with the implicit assumption that health systems have sufficient capacity to support the treatment of a growing numbers of patients in 2008,¹ means that the resources available for TB control are estimated to have increased from US\$ 0.6 billion in 2002 to US\$ 2.0 billion in 2008 ([Figure 3.8](#); [Table 3.4](#)). For all HBCs, the estimated gap between the funding already available and the total cost of TB control is US\$ 328 million in 2008, i.e. the NTP budget gap reported above.

The contribution by HBC governments to the total cost of TB control in 2008 is 73% on average, which is

slightly larger than their contribution to NTP budgets but very similar to figures reported for earlier years in previous reports in this series. Also as in previous years, this high average figure conceals important variation among countries ([Figure 3.10](#)). Seven HBCs are dependent on grants to cover around 50% or more of the total costs of TB control (Afghanistan, Bangladesh, the Democratic Republic of the Congo, Ethiopia, Indonesia, Kenya and Mozambique), and a further six (Cambodia, Myanmar, Pakistan, Uganda, the United Republic of Tanzania and Zimbabwe) that are likely to rely on grant funding to a similar or greater extent to fill reported funding gaps.

The share of the total costs provided by HBC governments is closely related to average income levels ([Figure 3.11](#)), although the government contribution relative to income levels is comparatively high in the Democratic Republic of the Congo, Ethiopia, India, South Africa, Viet Nam and Zimbabwe, and comparatively low in Cambodia, Indonesia, Kenya, Uganda and the United Republic of Tanzania.

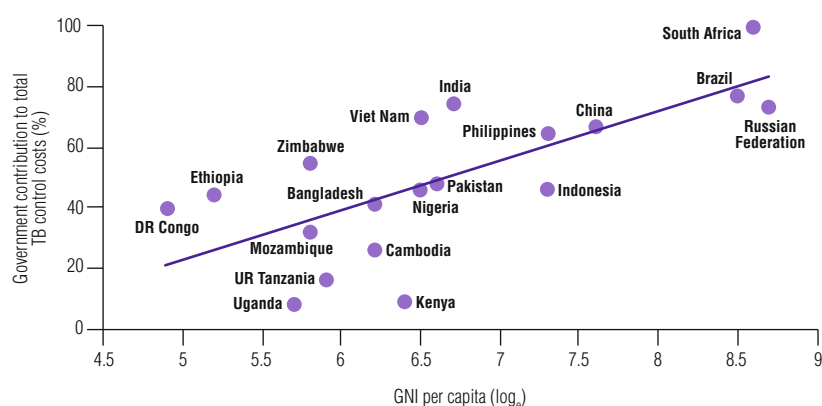
3.3.2 All countries, 2008

Total costs for 86 countries that submitted complete financial data to WHO, which account for 91% of TB cases globally and which were also included in the Global Plan, are shown for 2008 in [Figure 3.13](#).² Overall, country reports indicate planned costs of US\$ 3.1 billion in 2008, up from US\$ 2.3 billion in 2007.

¹ Nonetheless, the capacity of health systems to manage an increasing number of TB patients warrants further analysis, particularly in countries where the number of patients will need to increase substantially to achieve the MDG and related Stop TB Partnership targets for TB control.

² Four of the 90 countries that reported complete data were not considered in the Global Plan cost estimates.

FIGURE 3.11
Government contribution (including loans) to total TB control costs by gross national income (GNI) per capita, 19 high-burden countries,^a 2008



^a Data on GNI per capita not available for Myanmar and Afghanistan. Cost data for Thailand not complete.

3.4 Comparisons with the Global Plan

The Global Plan sets out what needs to be done between 2006 and 2015 to achieve the MDG and related Stop TB Partnership targets for TB control (see also **Chapters 1 and 2**). To assess the extent to which planning and financing for TB control at country level are aligned with the Global Plan, the financial resources estimated to be required for TB control in the Global Plan can be compared with estimates that are based on the financial data reported by countries.

3.4.1 High-burden countries

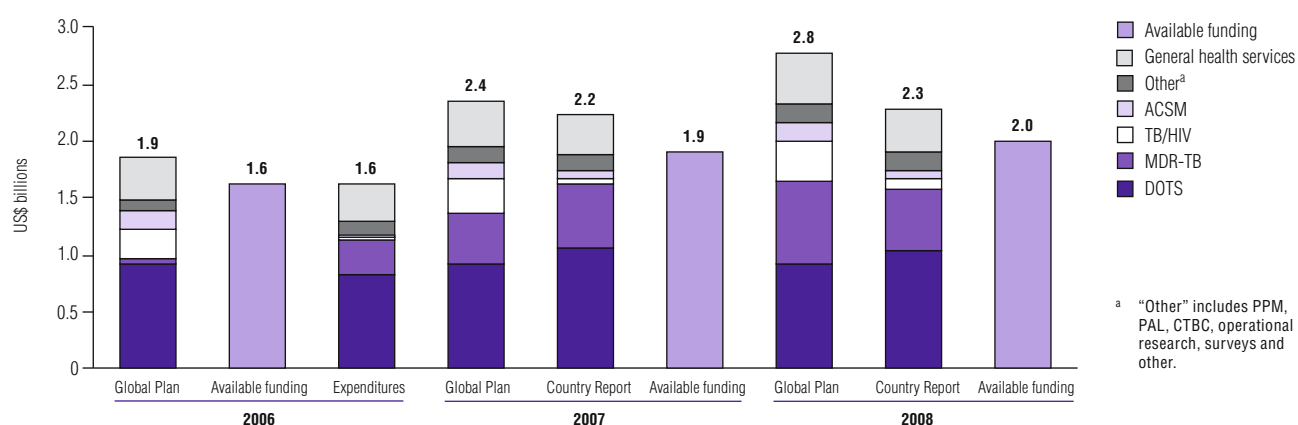
For the 22 HBCs as a whole, expenditures (2006), planned costs and available funding for 2006–2008 according to country reports are compared with those derived from the Global Plan in **Figure 3.12**.¹ In 2006, actual expenditures in HBCs were slightly lower than those estimated

to be required in the Global Plan, particularly for collaborative TB/HIV activities and ACSM. Expenditures for DOTS and use of general health system resources for DOTS treatment were similar. These findings are in line with the progress in DOTS implementation, the shortfall in implementation of collaborative TB/HIV activities (e.g. HIV testing, CPT and ART for HIV-positive TB patients) and the need for guidance in implementation of ACSM discussed in **Chapter 2**.

In 2007 and 2008, planned costs based on country reports are higher than expenditures in 2006, mostly due to an increase in planned spending on DOTS implementation and MDR-TB treatment (almost entirely in the Russian Federation and South Africa). However, planned costs fall short of those estimated to be required in the Global Plan, with the gap widening between 2007 and 2008 from US\$ 0.2 billion to US\$ 0.5 billion. Moreover, the gap is bigger once the distortion caused by the high planned costs for MDR-TB treatment in just two countries is removed. If the “excess” costs for diagnosis and treatment of MDR-TB (compared with the Global Plan) in the Russian Federation and South Africa are excluded, then the gap between the financial resources estimated to be needed in country plans and the Global Plan reaches US\$ 0.7 billion for the 22 HBCs in 2008. The shortfall in MDR-TB treatment applies in particular to China, India and Indonesia.

These aggregated comparisons conceal the fact that four HBCs have planned costs consistent with those detailed in the Global Plan in 2008: Afghanistan, Brazil, Kenya and the United Republic of Tanzania. In addition,

FIGURE 3.12
The Global Plan compared to planned costs, available funding and expenditures as reported by 22 high-burden countries, 2006–2008

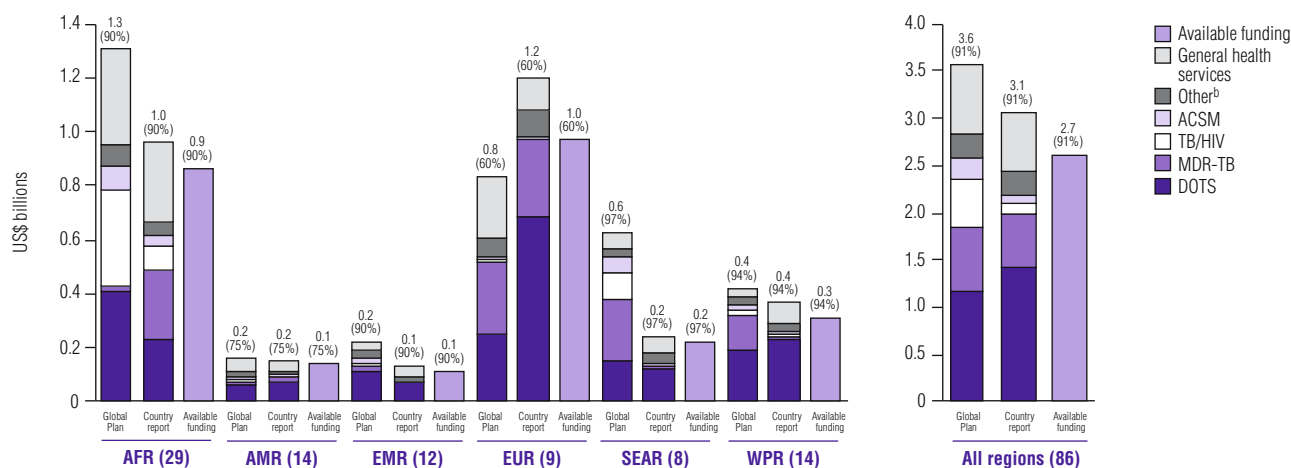


^a “Other” includes PPM, PAL, CTBC, operational research, surveys and other.

¹ See **Annex 2** for explanation of how costs for individual countries were derived from the Global Plan.

FIGURE 3.13

Total TB control costs in 2008 in 22 high-burden countries and 64^a other countries by region: country reports compared with the Global Plan. Numbers in parentheses above bars show the percentage of all estimated TB cases in the region accounted for by the countries included in the bar. Numbers in parentheses in the x-axis show the number of countries contributing to each bar.



^a The Netherlands, Serbia, Slovakia, and Switzerland are excluded because they were not included in the Global Plan.
^b "Other" includes PPM, PAL, CTBC, operational research, surveys and other.

there are four countries in which the discrepancy is due to the mid-2007 revision of the MDR-TB component of the Global Plan to include much more ambitious targets.¹ With the exception of MDR-TB, country plans are consistent with the Global Plan in China, Myanmar, the Philippines and Viet Nam (see [Annex 1](#)).

As noted in [Chapter 2](#), the Russian Federation and South Africa are unusual in having plans to treat more patients with MDR-TB in 2008 than the numbers anticipated by the Global MDR-TB and XDR-TB Response Plan. For collaborative TB/HIV activities, the shortfall is mainly in Cambodia, the Democratic Republic of the Congo, Ethiopia, India, Mozambique, Nigeria, Uganda and Zimbabwe. For ACSM, examples of countries with shortfalls include the Democratic Republic of the Congo, Ethiopia, India and Pakistan; exceptions with ACSM budgets comparable to or larger than those indicated in the Global Plan include Afghanistan, Brazil, Cambodia, Kenya and the Philippines. These country-by-country comparisons with the Global Plan are presented in [Annex 1](#).

3.4.2 All countries

The financial data submitted to WHO allow total TB control costs for 2008 to be estimated for 86 of the 171 countries that were included in the Global Plan (22 HBCs and 64 other countries).² These 86 countries account for 91% of all new TB cases arising each year.³ A regional comparison of costs and available funding based on (a) country reports and (b) the Global Plan is shown for these 86 countries in [Figure 3.13](#).

¹ *The Global MDR-TB and XDR-TB response plan 2007–2008*. Geneva, World Health Organization, 2007 (WHO/HTM/STB/2007.387).

² Four of the 90 countries that reported complete data were not considered in the Global Plan cost estimates.

³ All of the 171 countries included in the Global Plan accounted for 98% of TB cases globally in 2004.

Overall, country reports indicate planned costs of US\$ 3.1 billion in 2008 (up from US\$ 2.3 billion in 2007), compared with US\$ 3.6 billion in the Global Plan. The main discrepancy evident from [Figure 3.13](#) is the Global Plan's higher estimate of the cost of collaborative TB/HIV activities, which the regional analysis shows is primarily due to differences with country reports in the African and (to a lesser extent) South-East Asia regions. As noted above, however, the apparent similarity between the Global Plan and country reports for MDR-TB when data are aggregated for all countries is misleading. As [Figure 3.13](#) makes clear, costs for MDR-TB treatment based on country reports fall far short of Global Plan expectations in the South-East Asia and Western Pacific regions, by about US\$ 350 million in 2008. Within these regions, as also illustrated in [Chapter 2](#), the shortfall is primarily in China and India. The funding gap reported by countries amounts to US\$ 385 million in 2008, but the gap is US\$ 0.9 billion if the available funding of US\$ 2.7 billion is compared with the US\$ 3.6 billion requirement included in the Global Plan. The total funding gap further increases to US\$ 1.2 billion once the distortion caused by unusually high planned costs and funding for MDR-TB treatment in the Russian Federation and South Africa is removed.

3.4.3 Implications of differences between country reports and the Global Plan

The differences between the Global Plan and country reports highlighted above suggest that country planning, budgeting and financing is lagging behind the Global Plan for three major components of the Stop TB Strategy: collaborative TB/HIV activities, diagnosis and treatment of MDR-TB, and ACSM.

For collaborative TB/HIV activities, the difference between the Global Plan and country reports is exaggerated. The data presented in [Chapter 2](#) and [Annex 1](#) show

that although implementation of collaborative TB/HIV activities lags behind the Global Plan (consistent with the data presented in **Figure 3.12** and **Figure 3.13**), there are a few countries in which implementation in 2006 and plans for 2007–2008 are well aligned, as also noted in this chapter. Some of the shortfall in the budgets reported by countries is attributable to only partial inclusion of the costs of collaborative TB/HIV activities in NTP budgets. For example, budgeting for all TB/HIV activities in the United Republic of Tanzania led to estimates for 2008 that are almost the same as those in the Global Plan, in contrast to previous years when the TB/HIV budget reported by the NTP was much lower. In Kenya, implementation is in line with the Global Plan, but the NTP budget does not include the costs of activities funded by the national AIDS control programme or the cost of activities that are funded via NGOs. In India, the only TB/HIV-related costs included in the NTP budget are the costs of HIV testing for TB patients, which is a relatively inexpensive intervention; it is not known to what extent other activities are budgeted for and funded by the national AIDS control programme. More comprehensive assessments of the kind recently undertaken for the United Republic of Tanzania are needed to enable a more accurate assessment of the real gap between the Global Plan and country plans, and the associated funding requirements.

The shortfall in budgets for diagnosis and treatment of MDR-TB clearly mirror the shortfall in implementation and planning described in **Chapter 2**. The reporting of budgets for ACSM that are relatively small as well as different from those included in the Global Plan is consistent with the reality that ACSM represents new territory for most NTPs, and that it is a component of the Stop TB Strategy for which NTPs state that guidance is needed (see **Chapter 2**).

WHO has developed a planning and budgeting tool that is designed to help countries to align their plans and budgets with the expectations set out in the Global Plan, as well as to produce more accurate country-specific estimates of the financial resources that are required.¹ While the development of the tool was primarily motivated by a recognized need to assist countries to plan and budget in line with the Global Plan and the Stop TB Strategy, it is also intended to help with planning and budgeting for TB control in general. In 2007, 35 countries in the African Region were introduced to the tool through workshops and country missions, and several have used it to complete the task of setting out plans and budgets for a five-year period, starting in either 2007 or 2008. The countries that are most advanced include the Democratic Republic of the Congo, Gabon, Kenya, Malawi, Nigeria, South Africa, the United Republic of Tanzania and Zambia; progress has also been made in Ethiopia, Mozambique and Uganda. Outside Africa, the tool has been used in Afghanistan, Brazil, Indonesia and Uzbekistan, and will be introduced in all countries in the South-East Asia Region in 2008.

Review of finalized plans and budgets will increasingly inform and improve our comparisons of funding requirements reported by countries and those included in the Global Plan (e.g. as has been possible for Kenya, South Africa and the United Republic of Tanzania this year). For the 2009 report, this will include actual revision of the Global Plan estimates where appropriate, using up-to-date and country-specific data.

3.5 Budgets and costs per patient

Budgets and costs per patient in HBCs are shown in **Table 3.5**. The budget for first-line anti-TB drugs per patient is lowest in India (US\$ 14) and Zimbabwe (US\$ 12), and highest in Brazil (US\$ 77), Mozambique (US\$ 63) and the Russian Federation (US\$ 286). In most countries, the budget is in the range US\$ 20–40.

The budget per patient, including all line items, also varies. Three countries have budgets below US\$ 100 per patient (Ethiopia, India and Zimbabwe). A total of six countries have budgets in the range US\$ 100–200 per patient, five are in the range US\$ 200–300 and three are in the range US\$ 300–550.² The Russian Federation and South Africa are the only two countries with a budget exceeding US\$ 1000 per patient (for reasons discussed in section 3.3.1), but budgets are also relatively high in Brazil and the United Republic of Tanzania. Brazil is a middle-income country, and comparatively high costs are expected; the high cost in the United Republic of Tanzania reflects the inclusion, for the first time, of the budget for the full range of collaborative TB/HIV activities, even when some of those activities are funded and provided by the national AIDS control programme (see also sections 3.2.1 and 3.3.2).

In 2008, the total cost per patient treated is estimated at under US\$ 100 in only one country: India. It is in the range US\$ 100–300 in 12 countries (as in 2007), and US\$ 300–500 in three countries (also as in 2007). Five countries have much higher costs: Brazil, Mozambique, the Russian Federation, South Africa and the United Republic of Tanzania. As noted above, three of these countries are middle-income countries with generally higher prices for the inputs needed for TB control, while the Russian Federation and South Africa have large budgets for MDR-TB treatment as well as maintenance or upgrading of hospital infrastructure. Costs of US\$ 774 in the United Republic of Tanzania and US\$ 685 in Mozambique are due mainly to comprehensive budgeting for collaborative TB/HIV activities (see also sections 3.2.1 and 3.3.2 and **Annex 1**).

Among the low-income countries, there is no clear-cut relationship between the cost per patient treated and GNI per capita. For example, in India and Pakistan

¹ See http://www.who.int/tb/dots/planning_budgeting_tool/en/index.html

² Figures were not calculated for Thailand because the budget and health services utilization data reported to WHO were incomplete.

TABLE 3.5

Total TB control costs and NTP budgets per patient, high-burden countries, 2008

	2008 (US\$)			CHANGES SINCE 2002, (FACTOR ^a)		
	FIRST-LINE DRUGS BUDGET	NTP BUDGET	TOTAL COST	FIRST-LINE DRUGS BUDGET	NTP BUDGET	TOTAL COST
1 India	14	50	84	1.4	1.5	1.4
2 China	26	236	236	1.5	1.8	1.8
3 Indonesia	51	213	232	1.6	1.8	1.7
4 South Africa	55	1254	1917	0.9	4.3	2.5
5 Nigeria	30	258	419	0.6	1.8	2.1
6 Bangladesh	16	105	143	0.8	1.3	3.8
7 Ethiopia	19	70	119	0.7	1.6	1.9
8 Pakistan	31	119	135	0.5	2.6	1.4
9 Philippines	31	149	231	0.7	1.2	1.2
10 DR Congo	20	186	274	0.6	2.0	1.6
11 Russian Federation	286	5739	6389	4.6	4.6	5.8
12 Viet Nam	18	165	284	0.5	1.9	1.5
13 Kenya	33	301	319	0.9	5.8	4.8
14 UR Tanzania	21	703	774	0.5	8.6	4.2
15 Uganda	43	208	217	0.8	4.5	3.2
16 Brazil	77	748	1118	1.7	4.5	2.4
17 Mozambique	63	522	685	2.7	6.7	4.5
18 Thailand	–	–	–	–	–	–
19 Myanmar	28	100	114	1.6	4.8	2.1
20 Zimbabwe	12	92	163	0.4	3.2	1.6
21 Cambodia	19	243	308	0.5	1.8	1.5
22 Afghanistan	30	432	469	0.4	1.4	4.0
High-burden countries (median value)	30	213	274	0.8	2.0	2.1

– Indicates not available.

^a Calculated as 2007 value divided by 2002 value.

the cost per patient treated is low relative to income levels, while in the Democratic Republic of the Congo and Mozambique the cost per patient treated is relatively high compared with GNI per capita (data not shown). Overall, budgets and costs per patient are generally increasing, with a median increase of 200% per patient for budgets and of 210% for total costs (though the median for first-line drugs shows a decrease of 20% since 2002).

3.6 Expenditures compared with available funding and changes in cases treated

For countries that have received large increases in funding, there are two important challenges: to spend the extra money, and to translate extra spending into improved case detection and treatment success rates. To date, we have been able to conduct analyses for the HBCs only.

The ability to mobilize resources can be assessed by comparing available funding with budgets, and the ability to use financial resources can be assessed by comparing expenditures with available funding (Table 3.6; Figure 3.14). There were seven countries in which the NTP spent 80–100% of the funds available to them (Afghanistan, Brazil, Cambodia, China, the Democratic Republic of the Congo, the Philippines and Viet Nam) and three where expenditures exceeded the level of funding reported prospectively to WHO in 2006 (Kenya, Pakistan and South Africa).¹ India spent 75% of the available funds, and Ethiopia spent 71%. The remaining six countries that reported expenditure data spent between 61% (Indonesia) and 69% (Myanmar) of the available funds.

The data reported by the NTP in the United Republic of Tanzania indicate that only 24% of the available funding was spent; it seems likely that this is a problem with the expenditure report. No assessment could be made for Mozambique, Thailand and Uganda, as no expenditure data were reported; for these two African countries, as with the United Republic of Tanzania, reporting expenditure data to WHO has been a recurring problem. When country data are aggregated by region (Figure 3.14), the ability to mobilize and then spend financial resources in 2006 was best in the Region of the Americas, the European Region and the Western Pacific Region, and worst in the African Region (considering five countries that reported data, excluding South Africa where the magnitude of the budget and expenditures makes patterns in other countries hard to detect).

The ability to translate spending into improved case-finding can be assessed by comparing changes in expenditures 2003–2006 with changes in the number of patients treated 2003–2006 (Figure 3.15; 2006 is the most recent year for which both case notification and expenditure data are available). Of the 19 HBCs for which data were available, all of the 14 countries that increased spending between 2003 and 2006 also increased the number of new cases that were detected and treated in DOTS programmes (a similar pattern applied for new

¹ This explains why the value of expenditures in 2006 as a percentage of the available funding prospectively reported in 2006 (final column of Table 3.6) is above 100.

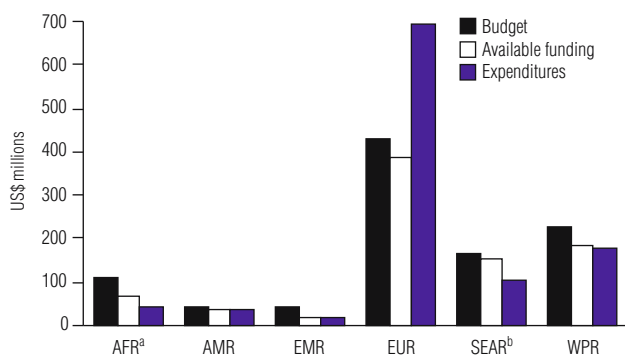
TABLE 3.6

Budget, available funding and expenditures (US\$ millions), high-burden countries, 2006

	BUDGET	AVAILABLE FUNDING ^a	EXPENDITURES ^b	AVAILABLE FUNDING AS % OF NTP BUDGET	EXPENDITURES AS % OF AVAILABLE FUNDING ^c
1 India	66	66	50	100	75
2 China	194	156	149	80	96
3 Indonesia	57	57	35	100	61
4 South Africa	78	78	112	100	143
5 Nigeria	25	20	13	79	65
6 Bangladesh	22	22	14	100	64
7 Ethiopia	6.4	6.4	4.5	100	71
8 Pakistan	21	13	13	61	104
9 Philippines	17	13	12	77	96
10 DR Congo	26	12	9.3	44	80
11 Russian Federation	428	385	694	90	180
12 Viet Nam	10	10	10	100	98
13 Kenya	30	10	11	32	114
14 UR Tanzania	8.1	7.7	1.8	95	24
15 Uganda	10	5.7	–	57	–
16 Brazil	40	34	34	85	99
17 Mozambique	12	9.3	–	76	–
18 Thailand ^d	4.3	4.3	–	100	–
19 Myanmar	17	7.4	5.1	44	69
20 Zimbabwe	13	11	10.6	80	100
21 Cambodia	7.0	4.7	4.3	67	91
22 Afghanistan	19	3.5	2.8	19	80
High-burden countries	1111	934	1184	77^e	90^e

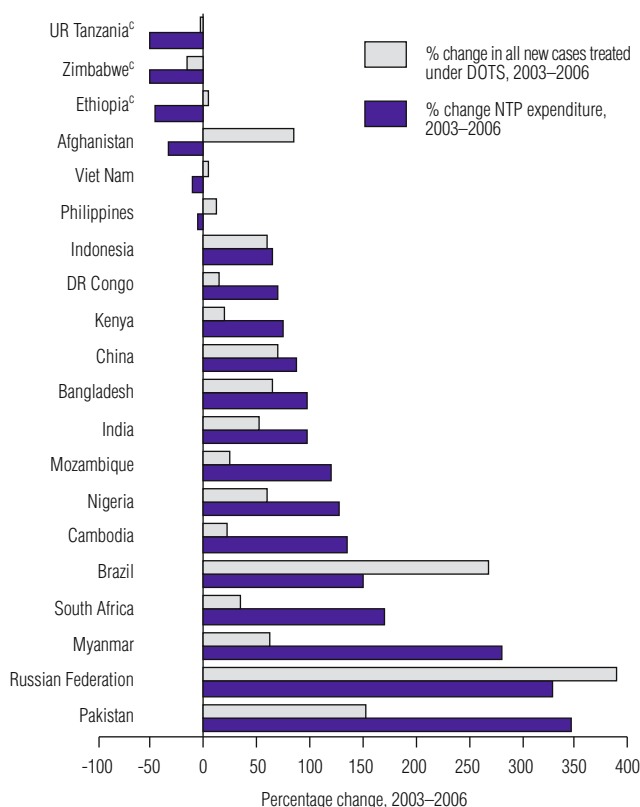
- Indicates not available.
- ^a Based on budget data, reported prospectively in 2006.
- ^b Based on actual expenditures reported in 2007.
- ^c Figures can be above 100% when additional funds were mobilized after budget data were reported in 2006.
- ^d Data for Thailand are partial.
- ^e Average values.

FIGURE 3.14
Budget, available funding and expenditures by WHO region, 19 high-burden countries, 2006



- ^a Expenditure data not available for Mozambique and Uganda. Data for South Africa not included.
- ^b Data are partial for Thailand.

FIGURE 3.15
Change in NTP expenditure and change in all types of patients treated under DOTS, 20 high-burden countries, 2003–2006



- ^a Expenditure data are not available for Thailand and Uganda. Comparison for Kenya is with expenditure 2004 and for South Africa is with expenditure 2005. Comparison for Mozambique is expenditure 2005 with expenditure 2002.
- ^b Countries ranked by percentage change in NTP expenditure.
- ^c Expenditure data for Ethiopia, UR Tanzania and Zimbabwe appear incomplete.

smear-positive cases specifically; data not shown). However, the relationship was variable. In Brazil and the Russian Federation, the increase in the number of patients treated under DOTS exceeded the increase in expenditures, probably because increasing the number of cases treated under DOTS requires a substitution of DOTS for non-DOTS treatment rather than an increase in total notifications. There was an almost one-to-one relationship between increased expenditures and increased notifications of new cases under DOTS in Indonesia, and the percentage increase in cases treated under DOTS was more than 70% of the percentage increase in expenditures in Bangladesh and China. At the other end of the spectrum, six countries reported lower expenditures in 2006 compared with 2003 (Afghanistan, Ethiopia, the Philippines, the United Republic of Tanzania, Viet Nam and Zimbabwe), of which two reported a small decrease in the number of cases treated (the United Republic of Tanzania and Zimbabwe), one reported a large increase in the number of cases treated (Afghanistan), and two reported small changes in the number of cases treated (the Philippines and Viet Nam). While the data are plausible for the Philippines and Viet Nam (small changes in both cases and expenditures are unsurprising in countries that have achieved targets for case detection and treatment success rates), it seems likely that expenditures have been underreported in the other four countries. This is consistent with the considerable difficulty in providing expenditure data to WHO that have been observed for these four countries over the past five years.

3.7 Global Fund financing

3.7.1 High-burden countries

The Global Fund is the single most important source of external financing in HBCs, with 11 countries (Bangladesh, Cambodia, the Democratic the Congo, Ethiopia, India, Indonesia, Mozambique, Pakistan, the Philippines, Uganda and Zimbabwe) relying on it to fund more than 25% of their NTP budgets. Only one HBC (Myanmar) lacks a Global Fund grant. After seven rounds of proposals, the total value of approved proposals in the HBCs is US\$ 1.4 billion and the amounts in the Phase 1 grant agreements (i.e. the grants that cover the first two years of the proposal) total US\$ 547 million (data not shown).

By the end of 2007, US\$ 502 million had been disbursed. Across all grants and countries, the actual disbursement rate is very similar to the expected rate,¹ though there is variation among countries with disbursements higher than those expected in 30 out of 53 grants and less than expected in 23 (data not shown). Countries for which disbursements are particularly low in relation to the expected disbursement of funds include Bangladesh (for one of the two principal recipients in round 5), Brazil (for one of the principal recipients in

round 5), India (rounds 3 and 4), Indonesia (round 5, possibly linked to a temporary cessation of funding in 2007) and Kenya (round 2). The main delay in the initial flow of funds to countries is the time taken to sign the grant agreement after proposal approval; the median time is 11 months, which is in line with Global Fund expectations that it takes about one year to prepare and finalize the Phase 1 grant agreement and related documentation once proposals are approved by the Board. Once grant agreements are signed, disbursements are usually made within two months.

3.7.2 All countries

In seven funding rounds between 2002 and 2007, the Global Fund approved proposals worth a total of US\$ 2.5 billion for TB control in 108 countries, out of total commitments for HIV, TB and malaria of around US\$ 10 billion.² The African Region has the single largest share, at 37% (Figure 3.16), which is higher than its share of the global burden of TB (31%). The South-East Asia and Western Pacific regions have the second and third highest funding in absolute terms, but less than might be expected given their share of the global burden of TB. The share of total funding approved for the Eastern Mediterranean Region and the European Region (13% and 11% respectively) is double these regions' share of the global burden of TB (6% and 5%), while the share of funding for the Region of the Americas is in line with its share of the global burden of TB.

The value of approved proposals for TB control was relatively high in rounds 5 and 6 compared with rounds 1–4, as was the proposal approval rate (Figure 3.17), but fell in round 7.³ The approval rate for TB proposals submitted to the Global Fund was 50% in round 5 and 64% in round 6, up from 37–40% in rounds 1–4, but fell to 51% in round 7.

3.8 Why do funding gaps for TB control persist?

The 22 HBCs have reported a combined funding gap of US\$ 328 million for 2008, while the funding gap reported for 90 countries (the 22 HBCs plus 68 other countries) amounts to US\$ 385 million. In the context of the Global Fund having issued seven calls for proposals since 2002 resulting in funding commitments of over US\$ 10 billion for HIV, malaria and TB control programmes, it may seem surprising that funding gaps for TB control persist.

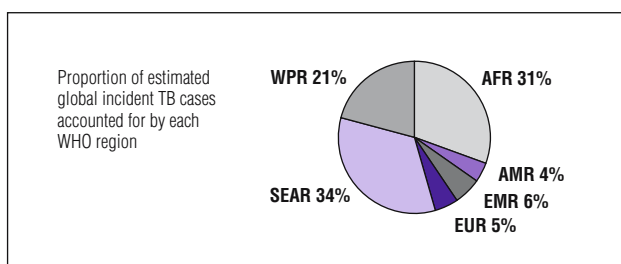
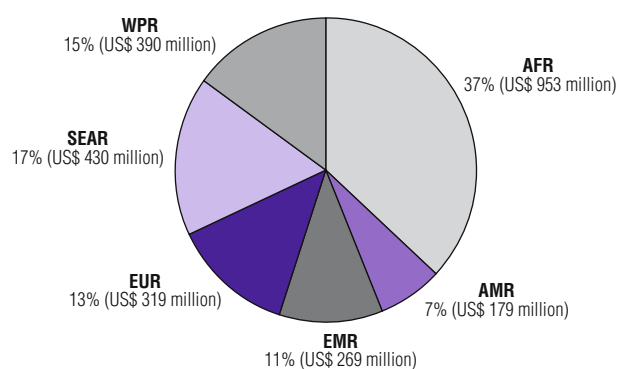
TB proposals submitted to the Global Fund must

¹ The expected rate assumes that disbursements should be spread evenly over the two- or five-year period of the grant agreement following the programme start date.

² The Global Fund has committed US\$ 10 billion in rounds 1–7; in round 7, US\$ 1.1 billion was committed for a two-year period. See www.theglobalfund.org/en/media_center/press/pr_071112.asp

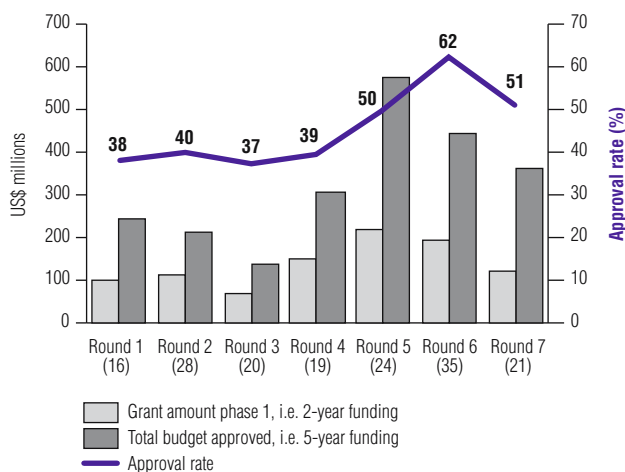
³ Calculated as the number of proposals approved divided by the number of proposals reviewed by the Global Fund's Technical Review Panel.

FIGURE 3.16
Global Fund funding for TB control by WHO region, as of end 2007^a



^a Refers to the total budgets approved in rounds 1–7.

FIGURE 3.17
Global Fund financing and proposal approval rate by round.
 Numbers under bars show the number of TB proposals approved in each round.



first be approved by its Technical Review Panel, and the number of proposals that can be approved for funding by the Board is limited by the total financial resources available. The US\$ 2.4 billion committed thus far for TB control (see section 3.7) represents about one quarter of total commitments to date; if funds were split evenly among AIDS, TB and malaria, this would increase to US\$ 3.3 billion. The Fund began to disburse funds in 2003, and current commitments extend to 2012; funds committed to date thus equate to approximately US\$ 240 million per year, with a theoretical maximum of around US\$ 330 million per year. This simple analysis demonstrates that even if TB control programmes were to increase their share of Global Fund commitments to 33%, the total reported funding gap of US\$ 385 million would not be eliminated, although it could be reduced by about US\$ 100 million. Excluding funding gaps in four middle-income countries with more domestic resources (Brazil, China, the Russian Federation and South Africa), the gaps reported by countries fall to about US\$ 100 million among HBCs, and to about US\$ 60 million in other countries. In this context, filling funding gaps via the Global Fund appears more feasible, but depends on (i) the submission of high-quality and sufficiently ambitious proposals including well-justified budgets, (ii) the criteria used by the Global Fund to define countries eligible to apply for funding and (iii) the criteria used to allocate funds among the three diseases. In round 7, there was a decrease in funding for TB control proposals, and a decrease in the proportion of proposals that were approved compared with the peak in round 6. The relative success of round 6 followed the organization of a series of proposal development workshops by the Stop TB Department in WHO; to maximize resource mobilization for TB control programmes in future rounds, this level of assistance with proposal preparation may be needed in future.

If gaps reported by countries are difficult to fill via the Global Fund, then closing the additional gap that will open up if all countries plan in line with the Global Plan via the Global Fund appears unrealistic. Filling funding gaps in the years up to the MDG target year of 2015 therefore depends on domestic resource mobilization and/or external resource mobilization from donors other than the Global Fund.

Increasing domestic financing for TB control would mean a major shift from trends during the period 2002–2008, when almost all of the increase in domestic funding among the 22 HBCs was accounted for by Brazil, China, the Russian Federation and South Africa. Two ways to assess the extent to which countries can mobilize more domestic funds are (i) to compare the percentage of funding currently being provided from domestic sources with a country's national income (measured as GNI per capita) to see if there are differences between countries with similar income levels and (ii) to compare costs and funding gaps per capita with total government health

TABLE 3.7

Financial indicators, high-burden countries, 2008

	NTP BUDGET PER CAPITA (US\$)	TOTAL TB CONTROL COSTS PER CAPITA (US\$)	FUNDING GAP PER CAPITA (US\$)	GENERAL GOVERNMENT EXPENDITURE ON HEALTH PER CAPITA (US\$) ^a	TOTAL EXPENDITURE ON HEALTH PER CAPITA (US\$) ^a	GENERAL GOVERNMENT HEALTH SPENDING USED FOR TB CONTROL (%)	TB GAP AS PERCENTAGE OF GENERAL GOVERNMENT HEALTH SPENDING (%)
1 India	0.1	0.1	0	5.4	31	1.9	0
2 China	0.2	0.2	0.04	27	70	0.6	0.2
3 Indonesia	0.2	0.3	0	11	33	2.5	0
4 South Africa	7.4	11	0	158	390	7.2	0
5 Nigeria	0.4	0.6	0.2	7.0	23	8.9	3.3
6 Bangladesh	0.1	0.2	0	3.8	14	4.5	0
7 Ethiopia	0.2	0.3	0	2.9	5.6	13	0
8 Pakistan	0.1	0.2	0.05	2.7	14	6.7	2.0
9 Philippines	0.2	0.3	0.02	14	36	2.4	0.2
10 DR Congo	0.3	0.5	0.1	1.3	4.7	42	6.3
11 Russian Federation	5.1	5.7	1.1	150	245	3.7	0.7
12 Viet Nam	0.2	0.3	0.005	8.1	30	3.7	0.1
13 Kenya	0.9	1.0	0.4	8.6	20	12	5.1
14 UR Tanzania	1.3	1.4	0.3	5.2	12	29	5.5
15 Uganda	0.4	0.4	0.3	6.2	19	7.9	4.9
16 Brazil	0.3	0.5	0.1	157	290	0.3	0.1
17 Mozambique	0.9	1.2	0.1	8.4	12	15	1.4
18 Thailand ^b	0.1	0.1	–	57	88	0.2	–
19 Myanmar	0.3	0.3	0.2	0.6	4.5	51	33
20 Zimbabwe	0.5	0.9	0.1	13	27	7.1	0.9
21 Cambodia	0.6	0.8	0.3	6.1	24	14	5.6
22 Afghanistan	0.5	0.5	0.2	2.3	14	25	10
High-burden countries (mean value)	0.9	1.2	0.2	30	64	12	3.8

– Indicates not available.

^a Latest data available are for 2004. Columns 6 and 7 will be overestimates if government health expenditure has increased since 2004.

^b Data for Thailand are partial.

expenditure per capita (Table 3.7). Comparing countries with similar income levels and a similar TB burden suggests that there is scope for increasing domestic funding in several countries including Indonesia (compared with the Philippines), Pakistan (compared with India) and Kenya (compared with Mozambique). Comparing costs and funding gaps per capita with government health expenditure suggests that the countries with the most capacity to fund TB control from domestic resources are Brazil and China, followed by India, the Philippines, Indonesia and the Russian Federation. The countries with the least capacity to increase funding from domestic sources include the African countries (except South Africa), Afghanistan, Cambodia and Myanmar.

Besides grant funding from the Global Fund, the President's Emergency Plan for AIDS Relief is a major source of donor funding, at least for collaborative TB/HIV activities, for most of the African HBCs as well as Viet Nam. With billions of dollars available through this plan, it is important that collaborative TB/HIV activities and related aspects of TB control (e.g. laboratory strengthening) are supported as much as possible – for example, as in happening in Kenya. UNITAID¹ is also a relatively new source of donor funding for TB diagnostics and anti-TB drugs.

Overall, the importance of increasing both donor and domestic funding for TB control is highlighted in a recent publication.² This included an analysis of funding needs according to the Global Plan for least-developed,

low-income, lower middle-income and upper middle-income countries separately. Combined with benchmarks for domestic contributions to funding for health care used by the Commission on Macroeconomics and Health,³ this analysis suggested that domestic funding could increase to about US\$ 5 billion per year by 2010 and that donor funding would need to increase to about US\$ 1 billion per year (compared with approximately US\$ 300 million in 2008).

3.9 Summary

The financial data reported to WHO in 2007 are the most complete since financial monitoring was initiated in 2002, with 90 countries that collectively account for 91% of the world's estimated TB cases providing the entire budget and funding data that were requested. Expenditure data continue to be more challenging to report, but 80 countries (77% of total cases globally) submitted a complete report.

NTP budgets in HBCs amount to US\$ 1.8 billion in 2008, up from US\$ 0.5 billion in 2002; NTP budgets for the 90 countries reporting complete data total US\$ 2.3

¹ <http://www.unitaid.eu/>

² Floyd K, Pantoja A. Financial resources required for TB control to achieve global targets set for 2015. *Bulletin of the World Health Organization*, 2008 [in press].

³ *Macroeconomics and health: investing in health for economic development. Report of the Commission on Macroeconomics and Health*. Geneva, World Health Organization, 2001:166–167.

billion in 2008. In HBCs, budgets are generally equivalent to about US\$ 100–300 per patient treated, but range from below US\$ 100 in India to above US\$ 1000 in the Russian Federation and South Africa. DOTS accounts for the largest single share of NTP budgets in almost all countries, but budgets for the diagnosis and treatment of MDR-TB have become strikingly large in absolute and relative terms in the Russian Federation and South Africa. In several African countries as well as Cambodia, collaborative TB/HIV activities account for a comparatively high proportion of the NTP budget.

With a few exceptions, NTP budgets do not include the costs associated with using general health system resources such as staff and infrastructure for TB control. When these costs are added to NTP budgets, we estimate that the total cost of TB control in HBCs will reach US\$ 2.3 billion in 2008 (up from US\$ 0.6 billion in 2002), and US\$ 3.1 billion across the 90 reporting countries. Costs per patient treated are generally in the range US\$ 100–400, and below US\$ 100 only in India.

For the 22 HBCs, NTP budgets and our estimates of the total costs of TB control have stagnated between 2007 and 2008 in all but five countries, four of which are in Africa. This trend is worrying, because it suggests that the deceleration in progress towards the case detection and treatment success targets highlighted in [Chapter 1](#) could persist into 2008.

Sustaining a trend evident since 2002, funding for TB control continues to grow, mainly from domestic financing in Brazil, China, the Russian Federation and South Africa and from Global Fund grants in other countries. Across HBCs in 2008, governments will cover 73% of the total costs of TB control and grants will cover 13% (including US\$ 200 million from the Global Fund, out of total grant funding of US\$ 297 million). For all coun-

tries, the figures are 75% and 12% respectively. Despite increases in funding, countries have reported funding gaps for 2008 that total US\$ 328 million among HBCs (14% of total costs) and US\$ 385 million across all reporting countries (13% of total costs). Only five HBCs reported that they had no funding gap for 2008.

Gaps reported by countries for 2007 and 2008 would be larger still if country plans and assessments of funding requirements were fully aligned with the Global Plan. In 2008, the gap between the total available funding based on country reports and the total funding requirements laid out in the Global Plan is US\$ 0.8 billion in HBCs and US\$ 0.9 billion across all 90 reporting countries. The discrepancy is mostly due to higher budgets for MDR-TB (South-East Asia and Western Pacific regions), collaborative TB/HIV activities (African and South-East Asia regions) and ACSM (all regions) in the Global Plan. These differences expressed in financial terms are consistent with results for the implementation and planning of interventions presented in [Chapter 2](#).

More positively, there are several examples of countries with plans and budgets that are well aligned with the Global Plan, as well as a few that were well-aligned before the mid-2007 upward revision of targets for the treatment of MDR-TB. Many countries in Africa including all of the HBCs in the region have embarked upon, and in some cases completed, the development of medium-term plans and budgets using a WHO planning and budgeting tool that is designed to help countries to plan and budget in line with the Global Plan. Completion of this work as well as the development of country-owned plans and budgets based on Global Plan targets in further countries are now crucial and should form the basis for intensified efforts to mobilize the necessary resources from both domestic and donor sources.