

1 **Chapter 7: Resource Needs**

2
3 **SUMMARY**

4
5 Increased investment in TB continues to be urgently needed. By fulfilling their UNHLM
6 commitments to invest at least US\$ 13 billion annually in TB prevention and care and
7 increasing funding for TB research and development to US\$ 2 billion annually, governments
8 can put the world on track to end TB.

9
10 By financing the Global Plan’s investment scenario (2018-2022), countries will reach:

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12
 - the UNHLM treatment targets set for 2022,
 - 13 • the End TB Strategy milestone of 2020 will be achieved a year later,
 - 14 • the world will be back on track to achieve the 2025 milestones,
 - 15 • and new tools from research and development will be on the horizon for the final
16 battle to end TB by 2030.

17
18 *Financing TB prevention and care:* The return on investment for one US\$ dollar spent on TB
19 prevention and care is US\$ 40 back. Meeting the full resource needs for 2018-2022 for TB
20 care and prevention will lead to 40 million people treated for TB, including 3.5 million
21 children and 1.5 million people with drug-resistant TB, and over 30 million people receiving
22 TB preventive therapy. This will lead to 1.5 million fewer deaths due to TB and 48 million
23 DALYs averted.

24
25 *Financing TB research and development of new tools:* Having new tools is essential to end
26 TB. Fully meeting the resource needs for developing new tools will lead to development of
27 the new diagnostics, new drugs and an effective vaccine which are needed to end the TB
28 epidemic. The cost of inaction or delay in increasing funding for TB research and
29 development will be approximately an additional 2 million people dying, an additional 40
30 million people developing TB and an additional 40 million DALYs lost (see Chapter 6 for
31 additional discussion of the cost of inaction).

32
33 While the bulk of these investments should come from domestic resources and international
34 donors, the mobilization of alternative funding sources – private sector funding, blended
35 financing, loan buy-downs, philanthropy from high net worth individuals, social impact
36 bonds, micro levies or taxes, and pooled donor trusts – could dramatically accelerate the pace
37 of scale-up.

38
39 **PRIORITY ACTIONS**

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41 To close the gap in funding for TB prevention and care the following priority actions need to
42 be taken:

- 43
 - The full replenishment of the Global Fund and use of all available tools to maximize
44 funds for TB from the Global Fund to meet the ambitious UNHLM targets, which
45 includes full disbursement of country allocations, expansion of catalytic funding and
46 prioritization of portfolio optimization.
 - 47 • The World Bank and other development banks should ensure that all instruments
48 available for loans and grants to high TB burden countries are considered during
49 negotiations on credit agreements in order to make funds available for TB, including
50 blended finance mechanisms and loan buy-downs.

- 51 • National TB Programmes and Partners need to tap the full potential of social health
52 insurance schemes, innovative funding and impact financing for TB.
- 53 • Heads of Governments of all high TB burden countries should increase domestic
54 funding for TB.
- 55 • Partners and advocates should engage with strategically important high-burden
56 middle-income countries to double or triple their domestic budgets for TB.
- 57 • BRICS and upper-middle income countries should increase their domestic resources
58 for TB to fully meet the increased funding needs to achieve the UNHLM treatment
59 targets.
- 60 • Additional external funding needs to be mobilized and made available to low income
61 countries and selected lower-middle income countries who have limited fiscal space
62 to increase their domestic budgets. In such countries a total of TKXXX billion USD
63 will be needed over the period 2020 to 2022.
- 64 • Eastern-European and Central Asian governments should explore financing a
65 significant share of the expansion of TB services through cost savings within existing
66 TB budgets: by decentralizing TB care, sharply reducing the number of people with
67 TB who are hospitalized and reducing hospitalization times.
- 68 • Develop investment cases for TB at country level using modelling and costing
69 projections to inform national strategic plans (NSPs), advocacy for resource
70 mobilization and resource allocations.
- 71 • Seek ways to improve the efficiency of TB programme implementation without
72 reducing quality.

73

74 For closing the funding gap on research and development of new tools there needs to be
75 urgent actions in these areas:

- 76 • Recognition by the global community that funding for TB research and development
77 is a shared responsibility. Countries should contribute at least 0.1% of their research
78 funding for TB.
- 79 • BRICS: As countries that are home to half of the world's TB burden with strong
80 research and development capacity, substantially increase funding for TB R&D.
- 81 • Increase support for TB R&D from pooled funding mechanisms such as the European
82 and Developing Countries Clinical Trials Partnership and the Global Health
83 Innovative Technology Fund.
- 84 • Tap innovative financing mechanisms, private sector funding and start-up financing
85 mechanisms to promote and fund new tools development.

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89 **Investment requirements to achieve the UN HLM funding targets**

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91 A significant increase in resources for both current interventions and development of new
92 tools is needed in order to reach the TB implementation targets that governments committed
93 to reaching at the UN High Level Meeting on tuberculosis. The returns on this investment
94 will be dramatic – both in human and economic terms.

95

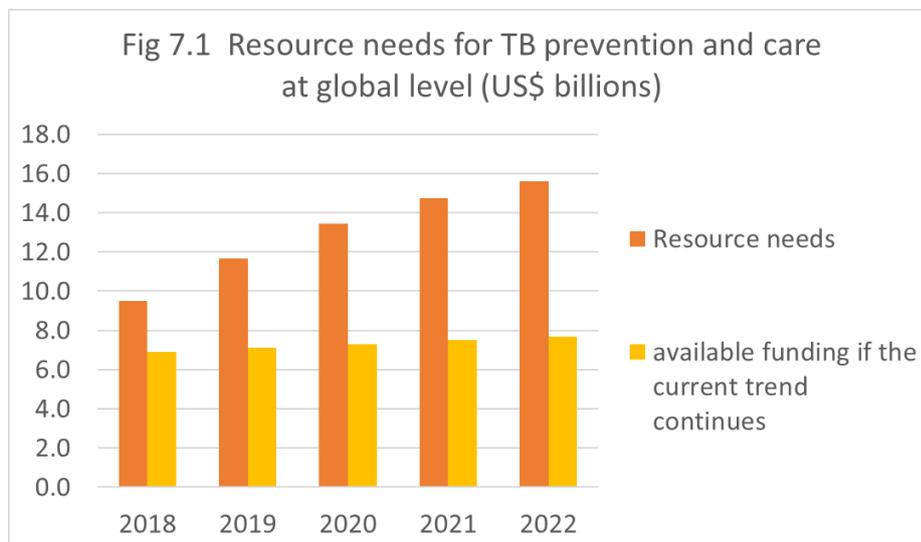
96 Between 2018 and 2022, a total of US\$ 65 billion is needed for providing TB prevention and
97 care, and at least US\$ 10 billion is needed for R&D for new TB diagnostics, medicines and at
98 least one vaccine. Fig. 7.1 shows the resource needs at global level for all countries, the

99 available funding if the current trend of funding continues without further increase and the
 100 funding gap as a result of this.

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 102

103 **FIGURE 7.1. GLOBAL RESOURCE NEEDS FOR TB PREVENTION AND CARE 2018-**
 104 **2022.**

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109 Table 7.1 shows the year-wise resource needs (2018-2022) for TB prevention and care for the
 110 world as a whole and for different groups of countries. These resources are needed to reach
 111 the UNHLM treatment targets for 2022 and to put the world back on track to end TB.
 112 Breaking the global resource needs down, in non-OECD countries US\$ 61 billion is needed,
 113 while in countries eligible for Global Fund financing US\$ 44 billion is needed over the 2018-
 114 2022 period.

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116 *Table 7.1: Resource Needs at Global level, by Income Status, Global Fund Eligible countries,*
 117 *Global Plan country settings, WHO regions and BRICS membership*

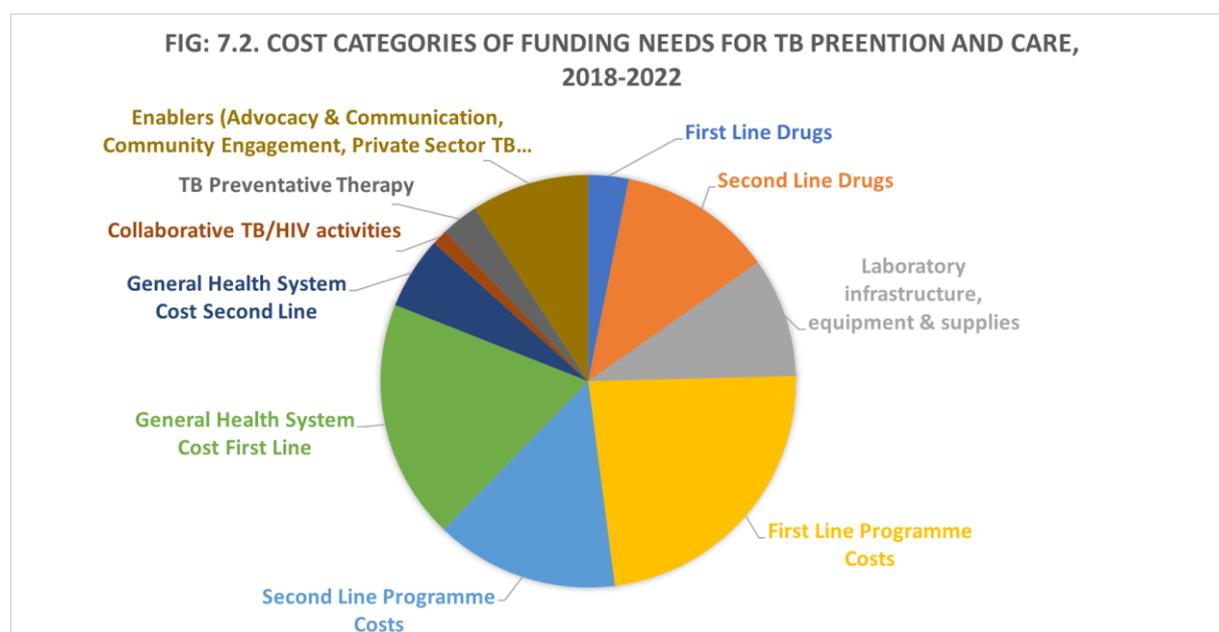
Resource Needs (USD Billions)						
	2018	2019	2020	2021	2022	Total
GLOBAL TOTAL						
Total (Global, including OECD countries)	9.51	11.65	13.46	14.76	15.62	65.00
Total (Global, excluding OECD countries)	8.80	10.94	12.79	14.12	15.02	61.68
BY INCOME STATUS						
Low income	1.27	1.65	2.10	2.36	2.55	9.93
Lower middle income	2.99	4.16	5.21	6.02	6.56	24.95
Upper middle income	3.02	3.48	3.71	3.84	3.91	17.96
High income	2.23	2.36	2.44	2.54	2.59	12.16
GFATM ELIGIBLE COUNTRIES, BY INCOME STATUS						
Low income	1.27	1.65	2.10	2.36	2.55	9.93
Lower middle income	2.99	4.16	5.21	6.02	6.56	24.95

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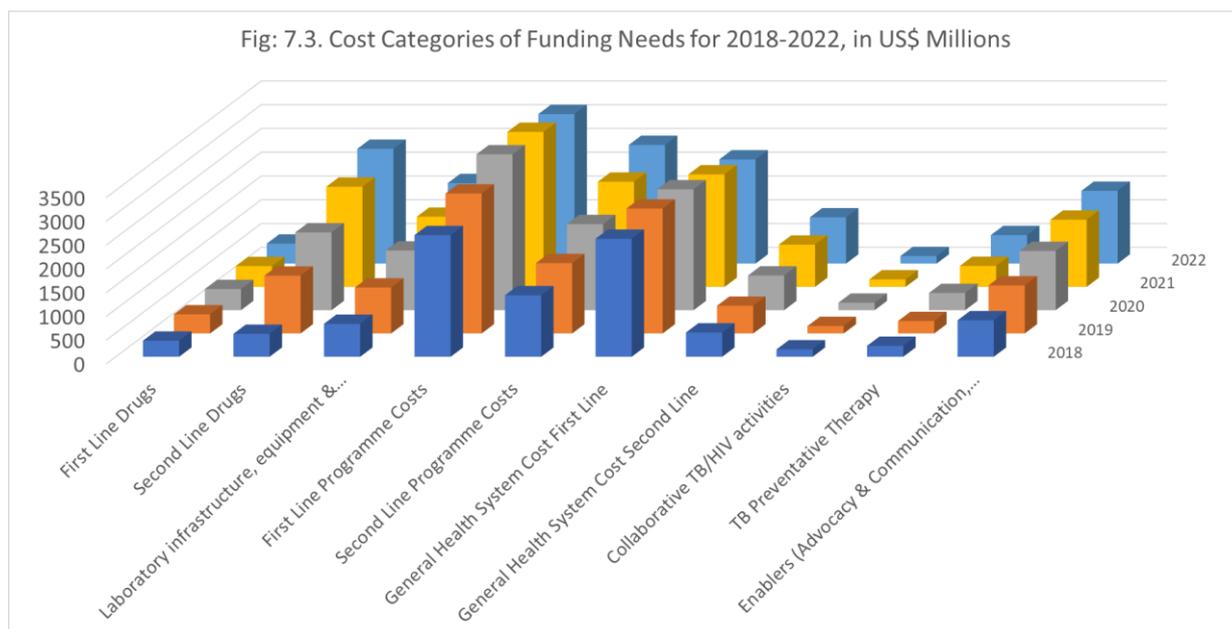
Upper middle income	1.55	1.83	1.97	2.02	2.07	9.45
Total	5.81	7.64	9.29	10.40	11.18	44.32
GLOBAL PLAN COUNTRY SETTING						
High MDR burden, Centralized Care	2.59	2.82	2.92	3.07	3.16	14.57
High TB/HIV, SADC	0.88	1.13	1.36	1.47	1.55	6.39
High TB/HIV, non-SADC	0.86	1.26	1.89	2.19	2.33	8.54
Moderate Burden, COE	0.33	0.45	0.60	0.70	0.78	2.87
High Burden, Private Sector	1.21	1.78	2.25	2.68	3.03	10.96
Moderate Burden, Middle Income	0.90	1.04	1.11	1.14	1.15	5.33
India	0.90	1.18	1.28	1.40	1.50	6.27
China	1.06	1.18	1.25	1.32	1.35	6.17
Low Burden, High Income	0.78	0.79	0.79	0.79	0.77	3.91
WHO REGION						
EMR	0.32	0.51	0.73	0.93	1.10	3.58
AFR	2.04	2.78	3.77	4.26	4.55	17.40
AMR	0.72	0.83	0.88	0.90	0.90	4.22
EUR	2.90	3.13	3.22	3.35	3.43	16.03
WPR	1.92	2.17	2.37	2.53	2.62	11.61
SEA	1.61	2.22	2.51	2.78	3.03	12.16
BRICS (BRA,CHN,IND,RUS,ZAF)						
Total	4.07	4.77	5.11	5.46	5.69	25.10

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Fig. 7.2 shows the disaggregation of total funding needs for 2018-2022 by cost categories, and Fig 7.3 shows the cost categories by year.



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132 First Line Programme Costs include management and supervision, TB programme human
133 resources, training, policy development, meetings, purchase of office equipment/vehicles,
134 construction of buildings for TB programme, routine surveillance, advocacy and
135 communication, public-private mix activities, community engagement, active case finding,
136 infection control, and management of TB drug procurement and distribution.

137

138 Second Line Programme Costs include management of drug-resistant TB services, renovation
139 of MDR-TB wards, Green Light Committee related activities, loss to follow up and contact
140 tracing, and palliative care.

141

142 The general health system cost category includes hospital out-patient consultations,
143 hospitalization and ambulatory care costs, together with distribution costs related to TB
144 commodities.

145

146 TB-HIV collaboration includes TB-HIV coordinating bodies, joint training and planning,
147 HIV testing for people with TB, TB screening for people living with HIV, preventive
148 therapy, and joint TB/HIV information and education. It does not include ART which is in
149 HIV programme budgets.

150

151 TB Preventive Therapy cost category includes drugs as well as TB infection testing for a
152 proportion of adult contacts only. It is assumed that isoniazid-based older regimen will be
153 replaced gradually with Rifapentine-based newer regimen. The cost of contact investigation
154 and exclusion of active TB before starting preventive therapy is not included here as they are
155 already included under first line programme costs and TB-HIV collaboration.

156

157 The cost category of Enablers includes a group of activities that provide an enabling
158 environment for rapid scale-up of TB prevention and care. These Enablers include advocacy
159 and communication, community system strengthening and engagement, private sector TB

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160 care, patient support and digital technologies. Although some of these activities are included
161 by several countries under the cost category Programme Costs it is insufficiently budgeted.
162 Therefore, the proportion of budget for these enablers were taken from best practice country
163 examples and applied to other countries, or to countries in similar settings (e.g. private sector
164 TB care was applied to only countries with a large private sector TB care).

165

166 The annual estimated resource needs go up from 2018 to 2022 because of two reasons: first,
167 due to the scale up of numbers of people to be diagnosed and treated, and second because
168 several unit cost categories are expected to grow as described in Annex 6. The fastest
169 growing unit cost category is laboratories because of anticipated changes in diagnostic
170 technology and anticipated larger numbers of people to received TB testing.

171

172 **Costing approach and limitations**

173

174 Resource needs were estimated from WHO’s TB financial database which has more than 100
175 countries reporting budgets and the health system costs estimated separately by WHO. From this
176 data unit costs were derived for cost categories, adjusted for future trends based on expert
177 opinion and applied to the treatment scale up targets from the TIME model. Unit costs were
178 imputed for countries which did not report to WHO using learner algorithms as part of the
179 modelling exercise. The detailed methodology for estimating the resource needs for reaching the
180 UN HLM targets is presented in Annex 6.¹

181

182 The costing approach is subject to certain limitations. The manner in which the different cost
183 categories are bundled together and reported by WHO is a constraint which does not allow cost
184 categories to be broken down in other ways. Furthermore, the costing for the period 2018-2022
185 does not factor in the introduction of future new diagnostics or drugs that are currently not
186 available.

187

188 The Global Plan recommends more robust collection of financial data from national TB
189 programmes, national health accounts, and international development partners, along with
190 increased investment in tracking and improving unit costs, costs of new interventions, and
191 domestic investments. In addition, the different cost categories should be disaggregated at the
192 point of data collection for a better understanding of the financial implications.

193

194 Governments should carry out country-level modelling of the TB epidemic and develop detailed
195 costing projections to be used to inform national strategic plans (NSPs) and Investment Cases for
196 ending TB. NTPs and TB advocates can use these NSPs and Investment Cases to advocate for
197 increased TB funding aligned with national budgeting processes and for donor engagement.

198

199 **What will the Global Plan achieve?**

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201 **Patients treated, lives saved and progress towards ending TB**

202

203 Meeting the full resource needs for 2018-2022 for TB care and prevention will lead to:

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- 40 million people treated for TB, including
- 3.5 million children and
- 1.5 million people with drug-resistant TB, and
- over 30 million people receiving TB preventive therapy.
- 1.5 million additional lives saved due to TB and
- 48 million DALYs averted. (see Annex 6 for details on DALYs averted)

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211 **New diagnostics, drugs and a vaccine in time to end TB**

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213 Fully meeting the resource needs for developing new tools will lead to:

¹ www.stoptb.org/global/plan/plan2/annexes.asp

- 214 • development of the new diagnostics, new drugs and an effective vaccine which are
 215 needed to end the TB epidemic.

216
 217 The cost of inaction or delay in increasing funding for TB research and development will be:

- 218 • additional 2 million people dying,
 219 • additional 40 million people developing TB and
 220 • additional 40 million DALYs lost

221 (see Chapter 6 for additional discussion of the cost of inaction).
 222
 223

224 **Return on investment (ROI)**

225
 226 When a TB programme provides people with effective prevention and treatment – preventing
 227 death and disability – these people receive spillover economic benefits. First, it is possible that
 228 the prevention of TB may save household expenditures on health care. Second, when TB is
 229 prevented (or effectively treated), household members are able to continue or resume productive
 230 work.
 231

232 A return-on-investment analysis was performed for the Global Plan 2018-2022, based on the
 233 methodology of the Lancet Commission on Investing in Health (Jamison 2013) but adapted to
 234 new guidelines for benefit cost analysis following the work with The Global Fund to estimate the
 235 Return on Investment of the new replenishment cycle 2020-2022. The methodology is described
 236 in annex 6.
 237

238 Table 7.2 summarises the net economic benefit and the Return-on-Investment for every \$ spent
 239 on the Global Plan by country group and income status.
 240

241 The Return-on-Investment for every US\$ spent on TB prevention and care as proposed in the
 242 Global Plan 2018-2022 is US\$ 40.4. The net economic benefit of the investment is estimated at
 243 US\$ 740 billion.
 244

245 An ROI of 1:40 makes TB prevention and care scale up under the Global Plan 2018-2022 one of
 246 the best investments under the SDGs.
 247
 248

249 *Table 7.2: Return-on-Investment and net economic benefit of the TB Global Plan 2018-2022*

ROI (per USD invested) relative to BAU	Net-Benefit, 2018-2022 (in billions US\$)	ROI, 2018-2022, for every US\$ invested
Global	\$736,000	\$40.4
By Country Group		
High MDR burden, Centralized Care	\$19,000	\$7.0
High TB-HIV, SADEC	\$100,000	\$56.1
High TB-HIV, outside SADEC	\$64,000	\$15.0
Moderate Burden, COE	\$3,000	\$3.0

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High Burden, Pvt Sector	\$205,000	\$43.6
Moderate Burden, Middle Income	\$34,000	\$52.5
India	\$182,000	\$134.5
China	\$66,000	\$47.8
Low Burden, High Income	\$64,000	\$223.2
By Income Status		
Low income	\$39,000	\$11.1
Lower middle income	\$303,000	\$33.0
Upper middle income	\$296,000	\$93.9
High income	\$97,000	\$45.3

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255 **Box 7.1 Permanent health systems gains as a result of investing in TB**

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257 Investments in TB strengthen health systems permanently, increasing their ability to fight other
258 diseases and outbreaks. This strengthening can be achieved in several ways.

259

260 First, investing in early and effective TB diagnosis builds lasting diagnostic, laboratory and case-
261 finding capacity in the health system. TB symptoms are not specific and occur in multiple
262 diseases, and tools such as microscopes and X-rays have manifold uses beyond TB. Efforts to
263 improve early TB case-finding therefore positively impact the early detection of other
264 conditions, particularly those affecting the lungs.

265

266 TB laboratory networks are known for establishing standardization and quality assurance
267 processes that can positively impact the quality of public health laboratories across the board.
268 The Global Plan calls for the integration of TB laboratory and diagnostics into health systems
269 and improved access through specimen transportation. It envisages well-integrated TB
270 programmes as a conduit for strengthening health systems for early disease diagnosis.

271

272 Second, investments that strengthen contact investigation for TB will create a system that can be
273 reliably called upon during infectious disease outbreaks, such as for Ebola, which demands the
274 rapid mobilization of both health facilities and communities to conduct extensive contact
275 investigations.

276

277 Third, fighting TB requires investment in airborne infection control practices. Such investment
278 builds the capacity of health systems to quickly respond to other airborne infection outbreaks
279 such as influenza and respiratory syndromes.

280

281 Fourth, as TB treatment requires lengthy interaction with patients and communities, TB
282 investments can strengthen overall engagement with these communities to the benefit of other
283 health programmes.

284

285 Fifth, TB treatment demands strong and reliable drug supply chain systems. Further
286 improvements in these systems, and greater integration of these systems into the wider health
287 systems of countries, directly benefits health systems seeking to improve supply chains for other
288 diseases.

289
290 Finally, costs besides commodity-based or direct costs make up a large proportion of the costs.
291 These costs involve laboratory strengthening, the improvement of health system components,
292 and human resource development – all of which have the potential to make a lasting, positive
293 impact on the overall strength of health systems.

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295

296 **The urgent need for funding for research and development**

297

298 The TB epidemic cannot end with the tools available today. Countries can achieve dramatic
299 gains by scaling up to meet the UN HLM targets. However, after 2025, existing tools will have a
300 diminishing impact and will no longer be sufficient to bend the epidemic curve of TB steeply
301 enough to meet the milestones of the End TB Strategy. Every day the epidemic continues, the
302 human and economic costs only increase. To avert these costs, it is imperative that we urgently
303 and rapidly scale up investments in new diagnostics, drug regimens and vaccines today.
304 Delaying that investment by even one year could result in billions of dollars in additional
305 treatment costs alone. TB research and development, access and optimization of new TB tools
306 are discussed in detail in Chapter 6.

307

308

309 **Sources of funding for the Global Plan**

310

311 The “global public goods”² nature of most of the TB investments makes it a priority for funding
312 with a wide societal benefit. Investment in TB gives one of the best returns of investments
313 among all SDG targets³. The Copenhagen Consensus Center estimates that 1USD invested in TB
314 gives 43 USD back. The Global Plan investment scenario gives a similar return on investment of
315 40 USD per dollar invested, as described above in this chapter.

316

317 The Stop TB Board in its meeting in January 2019, issued a Call for Action.⁴ Recognizing the
318 need for increased resources and the serious funding gap to reach the UN TB targets for 2022,
319 the Board called for:

² “Global public goods” are defined as those goods that are both “non-rival” (i.e. anyone can consume the good without affecting the utility derived from its consumption) and “non-excludable” (i.e. once the good is produced, no one can be prevented from enjoying it). World Bank (<http://web.worldbank.org/WBSITE/EXTERNAL/EXTOED/EXTANNREVEVEFFE/EXT2008ANNREVEVEFFE/0,contentMDK:21903365~menuPK:5397143~pagePK:64829573~piPK:64829550~theSitePK:4683541,00.html>). WHO (<http://www.who.int/trade/glossary/story041/en/>).

³ Copenhagen Consensus Center. Post-2015 Consensus: What are the smartest targets for the post-2015 development agenda? <https://www.copenhagenconsensus.com/post-2015-consensus>

⁴ THE STOP TB PARTNERSHIP BOARD CALLS FOR A DRAMATIC INCREASE IN FUNDING FOR TB http://www.stoptb.org/news/stories/2019/ns19_005.asp

- 320 • The full replenishment of the Global Fund and use of all available tools to maximize
321 funds for TB from the Global Fund to meet the ambitious UNHLM targets, which
322 includes full disbursement of country allocations, expansion of catalytic funding,
323 prioritization of portfolio optimization, etc;
- 324 • That Heads of Governments of all high TB burden countries increase domestic funding
325 for TB, and that the Stop TB Partnership and its partners engage with strategically
326 important high-burden middle-income countries to double or triple their domestic budgets
327 for TB;
- 328 • That the World Bank and other development banks ensure that all instruments available
329 for loans and grants to high TB burden countries are considered during negotiations on
330 credit agreements in order to make funds available for TB, including blended finance
331 mechanisms;
- 332 • For the Stop TB Partnership to work with partners to tap the full potential of social health
333 insurance schemes, innovative funding and impact financing for TB;
- 334 • Recognition by the global community that funding for TB research and development
335 (R&D) is a shared responsibility. As such, the Board supports the proposal to develop
336 specific targets for R&D into TB for each country, recognizing that different countries
337 might choose to support local or regional research initiatives;
- 338 • That the Stop TB Partnership form a "TB Finance Task Team" to work on traditional and
339 innovative options available to increase funding for TB particularly in the context of
340 Universal Health Coverage to identify opportunities and provide strategic guidance to the
341 Board and Secretariat for resource mobilization for the global TB response;

342
343 There are three broad sources of funding for implementation and research: domestic funding,
344 external funding and innovative financing.

345
346 **Domestic Financing**
347

348 For the high-income countries, BRICS countries and upper middle-income countries, nearly all
349 TB investments should flow from domestic resources. Russia and other eastern European
350 countries may be able to finance a significant share of the expansion of TB services through cost
351 savings within historical TB budgets: by continuing the current trend of people-centered TB care,
352 reducing the number of patients that are hospitalized, and reducing hospitalization times. Other
353 middle-income, high-burden countries could rationalize their TB activities by better integrating
354 TB care into general health services. However, a paradigm shift focused on ending TB will only
355 be possible if countries are prepared to dedicate special budget lines, as South Africa has done.
356 India has recently quadrupled its domestic budget for TB driven by high level political
357 commitment and the vision of the Prime Minister to end TB in the country 5 years ahead of the
358 global target. Such dramatic increases (doubling, tripling or quadrupling) in domestic budgets for
359 TB are needed in several middle income and high TB burden countries.

360
361 The economic realities are very different in low-income countries. Most of the high-burden
362 countries in this subset remain heavily dependent on external financing for their TB programmes.
363 Moreover, large parts of TB budgets currently go unfunded in many of these countries. These
364 countries will need increased external funding support, including grants and loans at
365 concessionary rates from development banks.

366
367 In order to determine the right blend of funding sources to finance the efforts outlined in this
368 Plan, the circumstances of each country need to be taken into account, as these vary widely. It is
369 important to track increases in domestic funding through better systems of financial reporting
370 from countries, especially through national health accounts where they exist.

371

372

373 **Increasing the efficiency of domestic TB programmes**

374

375 The choices facing TB policy makers and programme implementers are daunting because of a
376 persistently high burden of disease, limited resources, and the need to compare emerging
377 technologies with cheaper (but older and less effective) approaches.

378

379 This challenge requires a shift towards allocative efficiency, i.e. the maximization of health
380 outcomes using the most cost-effective mix of health interventions, delivered to target
381 populations in the highest priority areas via streamlined service delivery. Procurement of drugs
382 and diagnostic is an area where domestic budgets can be more efficient by procuring quality
383 assured products at good prices from the Global Drug Facility of Stop TB Partnership. The
384 UNHLM political declaration therefore encourages all countries to use the Global Drug Facility.

385

386 The Global Plan urges countries to use analytical approaches that incorporate data on the cost
387 and effectiveness of interventions in real-world applications in order to estimate how the burden
388 of TB can be addressed using available resources. It also encourages countries to seek ways to
389 improve the efficiency of TB programme implementation without reducing quality.

390

391 **Social health insurance**

392

393 Social health insurance (SHI) is a mechanism by which funds within countries can be raised and
394 pooled to finance health services.⁵ In European SHI systems, employees and their employers
395 contribute to a package of services available to the insured and his or her dependents. Many
396 governments also subsidize these systems to ensure sustainability.

397

398 These contributions programmes are designed to ensure that the rich contribute more than the
399 poor and that the sick do not pay more than the healthy. In addition, some governments have
400 extended coverage to people who cannot pay, such as the poor and unemployed, by meeting or
401 subsidizing their contributions.

402

403 This approach has benefits in the context of TB. As SHI schemes generally charge higher rates
404 for coverage to wealthier people (who are less likely to have TB) and often provide free coverage
405 to poorer people (who are more likely to have TB), SHI mechanisms can help to reduce health
406 inequalities, avoid catastrophic costs for people with TB, and redistribute funds towards TB –
407 increasing the overall levels of funding available for fighting TB.

408

⁵ Thinking of introducing social health insurance? Ten questions. World Health Report background paper. Geneva: World Health Organization; 2010.

409 A number of countries are planning to introduce and/or scale up SHI as part of their efforts to
 410 attain UHC. TB programmes must seize the opportunity to include TB care in the package of
 411 coverage provided by SHI. As much as possible, all forms of TB managed by both public and
 412 private health systems should be brought under the coverage of SHI schemes. Efforts should also
 413 be made to ensure that SHI schemes are inclusive and provide coverage to key populations, such
 414 as migrants.

415
 416 For financing UHC several countries are changing their health financing mechanisms by
 417 introduction of Strategic Purchasing of services and a range of Provider Payment Mechanisms
 418 with or without SHI. TB programmes need to take active part in these discussions in order to
 419 benefit from such health financing approaches.

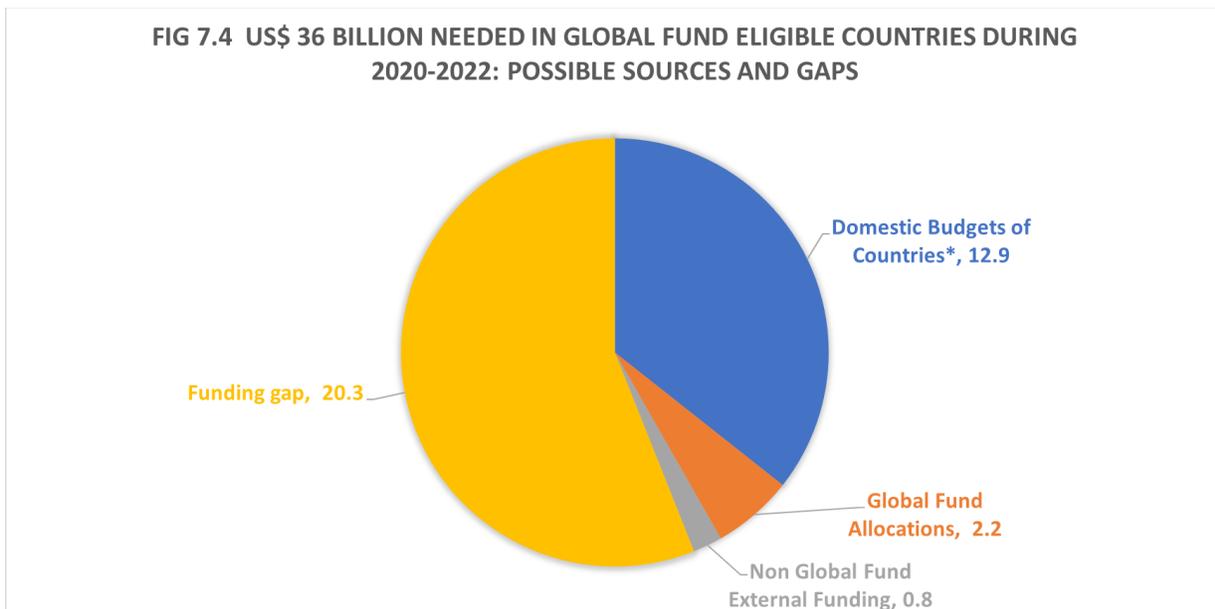
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 421 **International Financing**

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 423 Fig. 7.4 provides an illustration of the need for increased international funding in Global Fund
 424 eligible countries. It shows the funds that are anticipated from domestic sources, the Global
 425 Fund, and other external sources, as well as the additional funding that countries will require
 426 over and above these sources.

427
 428 Given that the figures for domestic funding are based on the optimistic forecast scenarios
 429 prepared by the Global Fund, it is clear that there is a significant and increasing need for
 430 additional contributions from the Global Fund and from other international sources. Without
 431 such additional funding, the 2022 targets will not be met.

432
 433 For Global Fund-eligible countries, the total resource need for the Global Fund funding cycle
 434 2020-2022 is US\$ 36 billion. The optimistic scenario of increased domestic funding, along with
 435 continued external funding at current levels, will provide up to US\$ 16 billion, which leaves an
 436 additional funding requirement of US\$ 20 billion that needs to be mobilized.

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Loans from Development Banks, including Loan Buy Downs and converting debts into grants:

World Bank and other Regional Development Banks provide loans to countries which if used smartly can make substantial resources available for TB. Such loans have been used by countries to fund TB programmes since several years. More recently innovative approaches have been used by blending loans and grants from different sources which makes such borrowings more attractive to countries. One such approach is to use grants from Global Fund, bilateral donors or private sector to pay for the interest of loans taken by countries from the World Bank or Regional Development Banks. This is often referred to as “loan buy-down”. An example is the loan buy-down for India TB programme where Govt. of India accessed a World Bank loan of 500 billion USD for TB and the interest amounting to about 40 million USD was paid by the Global Fund. In low income countries another approach of converting loans into grants could also be implemented.

High Net Worth Individuals and The Giving Pledge

The Giving Pledge is a commitment by the world's wealthiest individuals and families to dedicate the majority of their wealth to philanthropy. By 2019, 204 people have pledged and their pledges total over US\$500 billion. It is a hitherto untapped source of funding for TB.

The Role of Innovative Financing In The Fight Against TB

Global health has a strong track record in developing innovative financing mechanisms. While still primarily backed by traditional donors, the Global Fund and UNITAID, for example, have developed innovative approaches to mobilizing, pooling, channeling, allocating and implementing resources in order to direct large amounts of funding rapidly to low-income and middle-income countries.⁶

These mechanisms will continue to play a key role in the fight against TB. The Global Fund alone contributes nearly 70% of international financing.⁷ But, there is a need to cultivate funding from non-traditional donors.

Impact Bonds

One instrument that may have the potential to secure additional funding is the impact bond. This is a financial scheme whereby investors pay in advance for interventions in order to achieve agreed-upon results. Then, they work with delivery organizations to ensure that those results are

⁶ Atun R, Knaul FM, Akachi Y, Frenk J. Innovative financing for health: what is truly innovative? Lancet. 2012;380(9858):2044–9.
⁷ Institute for Health Metrics and Evaluation. Financing global health 2014: shifts in funding as the MDG era closes. Seattle, WA: IHME; 2015.

482 achieved. Outcome funders (governments and/or donors) make payments to investors if the
483 interventions succeed, with the degree of returns linked to the level of success of the results
484 achieved. In this sense, impact bonds are like other results-based approaches, but with upfront
485 capital. This ensures finance at affordable rates for service providers. There are two main types
486 of impact bonds: Social impact bonds (SIBs) are typically implemented on the scale of a city or
487 district. Development impact bonds (DIBs) are typically implemented on the scale of a country
488 or significant region of a country.

489
490 In the context of TB programming, impact bonds could encourage investors to provide upfront
491 capital to support the efforts of various service providers to improve TB diagnosis and treatment
492 in high-burden communities.

493
494 These activities would have both social and financial benefits. The social impact would be
495 generated from the reduced burden of disease and the increased productivity of a population with
496 fewer active TB cases. Governments and companies providing TB care (for example in mining
497 communities) would realize financial benefits through the reduced costs incurred in treating
498 patients. The government would also benefit from the increased tax revenues generated from a
499 more economically productive population. These savings would form part of the capital that
500 would be paid back to investors.⁸

501 502 **Blended finance**

503
504 Blended finance is another framework that has the potential to increase the funding available for
505 TB programmes and R&D. As the name suggests, this approach facilitates the blending of public
506 and private capital to finance development goals.

507
508 Its principal aim is to unlock investment from the private sector. Typically, clinical trials for new
509 tools (e.g. TB tests) constitute a high-risk activity with no guaranteed financial returns for a
510 company. Blended finance seeks to reduce that risk by providing public sector and philanthropic
511 funding to defray programme costs – such as technical support for study and intervention design
512 – that a company would not be able to meet. The approach therefore has the potential to leverage
513 private sector investment, innovation and expertise for projects that would otherwise be left on
514 the shelf.

515 516 **Micro levies/taxes**

517
518 Taxes and micro levies on consumer goods can also generate resources for global health. The
519 most cited example is a small tax on airline ticket purchases. Started in 2006 in France, the tax
520 has now spread to Cameroon, Chile, Congo, Madagascar, Mali, Mauritius, Niger, and South
521 Korea. The funds raised support UNITAID in purchasing treatments for HIV, tuberculosis and
522 malaria. From a tax of around US\$ 1 for economy-class tickets and US\$ 40 for business-class
523 seats, as of 2019 UNITAID manages a health project portfolio of US\$ 1.3 billion.⁹ There remain

⁸ Milken Institute. Innovative financing for global health R&D; 2012
(<http://assets1c.milkeninstitute.org/assets/Publication/InnovationLab/PDF/FIL-Global-Health-Report.pdf>).

⁹ Unitaid. Annual report 2018-2019; 2019 (<https://unitaid.org/annual-report-18-19/>)

524 numerous other opportunities in the areas of extractive industry, processing, consumption and
525 finance where such taxes could be levied.

526

527 **Pooled donor trusts**

528

529 Donor-based trusts are pooled funds that distribute grants to organizations to meet defined social
530 outcomes. Their main feature involves a multi-donor approach, which aims at better coordinating
531 the funding for programmes, while raising awareness for issues that need additional attention.

532

533 Trusts can help to simplify the grant-making process and maximize impact. For example, the
534 Power of Nutrition is an independent charitable foundation founded in 2015 with US\$ 150
535 million contributed by the UK government (DFID) and the Children’s Investment Fund
536 Foundation, followed by additional founding contributions made by UBS Optimus Foundation,
537 with the World Bank and UNICEF serving as implementing partners. The foundation works to
538 increase the efficiency of funding for undernutrition and other specific health goals related to
539 stunting and wasting. The fund requires countries to provide matching capital for efforts to tackle
540 the issues.

541

542 **Meeting the financing needs for research and development**

543

544 There is a huge gap in financing for research and development for new tools to fight TB. In
545 2017, a total of US\$ 772 million was invested in TB R&D, just 38.6% of the US\$ 2 billion
546 annual funding target.¹⁰

547

548 This shortfall in funding means researchers must limit their projects to fit within a constrained
549 funding environment, stifling the creativity, innovation and experimentation needed for the
550 development of new diagnostics, medicines and vaccine. Crucially, insufficient resources limit
551 the number of researchers willing to enter or stay in the field of TB R&D.

552

553 To increase funding for TB R&D, action is required in the following key areas:

554

555 **Increasing the donor base**

556

557 Maintaining current partnerships and increasing the funding base with new donors, investors and
558 private sector actors are priorities.

559

560 These efforts must increase. Government, public sector and philanthropic donors, particularly the
561 Bill & Melinda Gates Foundation, have provided essential funding for TB R&D, and some
562 pharmaceutical industry partners have also contributed resources and expertise.

563

564 However, expanding investments from BRICS countries – countries that account for nearly half
565 of all TB and have significant research infrastructure and capacity – would provide a major
566 boost. The establishment of the BRICS New Development Bank (NDB), with its US\$ 50 billion
567 in capital, represents one such opportunity for BRICS investment in TB R&D.

568

¹⁰ Frick M. 2014 report on tuberculosis research funding and trends, 2005-2013. Treatment Action Group; 2015.

569 A number of additional funding sources exist, including pooled funding mechanisms such as the
570 European and Developing Countries Clinical Trials Partnership and the Global Health Innovative
571 Technology Fund. It is imperative that these initiatives be strengthened, supplemented, and
572 adequately coordinated.

573

574 The complexities, costs and risks of TB R&D will require multiple funding platforms and
575 partners, and a combination of push and pull mechanisms. Push mechanisms, such as traditional
576 grants, finance R&D activities up front, reducing the risk to researchers and developers. Pull
577 mechanisms incentivize private sector investment in R&D. In 2007, for example, the US Food
578 and Drug Administration introduced the priority review voucher, granted to companies that
579 discover drugs for neglected diseases. These vouchers can then be sold on the secondary
580 market.¹¹ For diagnostics, expanding the market through widespread implementation of existing
581 solutions, while at the same time making new tools more affordable, would help to drive a
582 virtuous cycle of demand creation.

583

584

¹¹ Noor W. Placing value on FDA's priority review vouchers. *In Vivo*. 2009;27(8):1–8.