Innovative financing for health: what is truly innovative?

Rifat Atun, Felicia Marie Knaul, Yoko Akachi, Julio Frenk

Development assistance for health has increased every year between 2000 and 2010, particularly for HIV/AIDS, tuberculosis, and malaria, to reach US$26·66 billion in 2010. The continued global economic crisis means that increased external financing from traditional donors is unlikely in the near term. Hence, new funding has to be sought from innovative financing sources to sustain the gains made in global health, to achieve the health Millennium Development Goals, and to address the emerging burden from non-communicable diseases. We use the value chain approach to conceptualise innovative financing. With this framework, we identify three integrated innovative financing mechanisms—GAVI, Global Fund, and UNITAID—that have reached a global scale. These three financing mechanisms have innovated along each step of the innovative finance value chain—namely resource mobilisation, pooling, channelling, resource allocation, and implementation—and integrated these steps to channel large amounts of funding rapidly to low-income and middle-income countries to address HIV/AIDS, malaria, tuberculosis, and vaccine-preventable diseases. However, resources mobilised from international innovative financing sources are relatively modest compared with donor assistance from traditional sources. Instead, the real innovation has been establishment of new organisational forms as integrated financing mechanisms that link elements of the financing value chain to more effectively and efficiently mobilise, pool, allocate, and channel financial resources to low-income and middle-income countries and to create incentives to improve implementation and performance of national programmes. These mechanisms provide platforms for health funding in the future, especially as efforts to grow innovative financing have faltered. The lessons learnt from these mechanisms can be used to develop and expand innovative financing from international sources to address health needs in low-income and middle-income countries.

Published **Online**
October 24, 2012
http://dx.doi.org/10.1016/S0140-6736(12)61460-3

The Business School and Faculty of Medicine, Imperial College London, London, UK (Prof R Atun FRCP); **Harvard Global Equity Initiative, Boston, MA, USA** (F Knaul PhD); **Mexican Health Foundation, Mexico City, Mexico** (F Knaul); **The Global Fund to Fight AIDS, Tuberculosis and Malaria, Geneva, Switzerland** (Y Akachi PhD); **and Harvard School of Public Health, Boston, MA, USA** (J Frenk PhD)

Correspondence to:
Prof Rifat Atun, The Business School and Faculty of Medicine, South Kensington Campus, Imperial College London, London SW7 2AZ, UK
r.atun@imperial.ac.uk

Introduction

Development assistance for health (DAH) has increased every year from 2000, particularly for HIV/AIDS, tuberculosis, and malaria, to reach US$26·66 billion in 2010; however, in 2011, the rate of growth decreased because of economic difficulties experienced by donor countries. Total public domestic spending in low-income and middle-income countries on health increased from $368·46 billion in 2008, to $410·50 billion in 2009.[1]

In 2009, sub-Saharan Africa received the largest amount of DAH ($7·61 billion; 30%) followed by south Asia ($1·85 billion; 7·2%), east Asia and the Pacific ($1·48 billion; 5·8%), and north Africa and the Middle East ($554·98 million; 2·2%).[1] Between 2003 and 2008, official development assistance (ODA) for maternal, newborn, and child health increased by 105%, from $2·632 billion to $5·395 billion. The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) and GAVI were largely responsible for the increases in DAH for HIV/AIDS (together with PEPFAR [US President's Emergency Plan For AIDS Relief]), tuberculosis, malaria, and maternal and child health.[2]

Increased DAH has enabled remarkable global progress towards the health Millennium Development Goals (MDGs). However, between 2008 and 2009, despite funding needs to sustain the health gains,[3] reduced growth of HIV/AIDS funding led to a slower rise in DAH to sub-Saharan Africa than to other regions.[1] Funding projections from traditional donor sources and the present trajectory of progress in achievement of MDGs suggest that these goals will not be met in sub-Saharan Africa and south Asia—two regions that have the greatest burden of communicable diseases and maternal and child deaths, and that face the emerging challenge of non-communicable diseases (NCDs).[4]

Continued global economic crisis means that increased financing from traditional donors is unlikely in the near term. Innovative financing is crucial to generate additional finances and to channel funds effectively from established and new sources to sustain health gains, achieve the MDGs, and address the NCD burden in low-income and middle-income countries.[5,6]

The term innovative financing—which gained prominence in 2002, when concerns were raised about the resources needed to achieve the MDGs[7]—has been variously defined to describe new financing from non-traditional sources and incentives to mobilise them, albeit without a conceptual model that brings together these definitions. A unified definition of innovative financing is challenging because of the varied views on what is innovation or innovative. In the 1930s, Schumpeter[8] distinguished between invention and innovation to define innovation in terms of production function with reference to new inputs, introduction of a new product (or a qualitative change in an existing product), a new form of organisation, or the opening of a new market. Innovation is viewed in terms of new products and processes.[9] Innovation is dynamic, discontinuous, incremental, interdependent, and affected by factors such as a network of stakeholders, availability of resources, incentive systems, and constraints.[10] Innovation creates ongoing renewal. Hence, what is innovative today may soon become redundant, as new inputs, processes, organisational forms, products, and services emerge.

In this report we use the value chain framework[11] to conceptualise innovative financing. We review published

papers by searching major health databases and reports from international agencies, and studying references from retrieved publications to analyse international funding from new sources and new organisational forms that have reached global scale in channelling new funds to countries. We do not analyse innovative financing from domestic sources, because this subject is well described in the World Health Report 2010.[12]

Conceptualisation of innovative financing with the value chain framework

We use the value chain framework to describe key steps that transform funding inputs from donors to outcomes—namely: resource mobilisation; pooling of financial resources; channelling of resources to countries; allocation of resources to different health-system functions, disorders, and interventions within recipient countries; and funding for implementation of programmes (figure 1). Every step in this chain of activities is needed to transform inputs to the eventual products and services. At each step of the chain the product or service gains value. That added value is compounded throughout the chain, and with linkage of elements the chain acts like a value multiplier. Innovation is possible to improve each step of the chain or to improve linkages among steps of the chain to create additional value to the end product—namely, the rapid channelling of additional funding for health at scale for better health outcomes in low-income and middle-income countries (appendix).

See Online for appendix

The value chain framework allows researchers to consider innovative financing broadly to include non-traditional approaches to resource mobilisation that supplement official contributions, along with innovative ways to pool resources, channel funds to countries, and create new incentives for implementation of programmes. The value chain approach differs from earlier definitions of innovative financing (appendix) since it provides a holistic and integrated view.

Trends in innovative financing for health: 1990–2010

Tracking of global health funding is challenging because of non-standardised definitions and collation of data from various institutions, especially for resources that are not systematically included in the Organisation for Economic Co-operation and Development (OECD) Creditor Reporting System (CRS), which provides the total ODA disbursement recorded for health, population, and reproductive health.[13]

We estimate innovative financing in 1990–2010, by including funding from private foundations, such as the Bill & Melinda Gates Foundation (Gates Foundation), and private companies. We do not consider local currency bonds issued by the multilateral development banks as innovative financing because they are within the so-called traditional mandate of these institutions.

The OECD CRS estimates health ODA in 2009 to be about $17·0 billion. Statistics from the OECD's Development Assistance Committee (a forum for selected OECD countries to discuss overseas development assistance and poverty) provide a partial description of innovative financing because data are collected for commitments, actual disbursements (and do not capture front-loading of financing—ie, when future aid flows are structured to be used early), and official sector contributions, but not private funding flows.[14] The World Bank estimates that between 2000 and 2008, innovative financing generated $57·1 billion in official funding flows for health, including local currency bonds issued by multilateral development banks ($40·1 billion) and aid from emerging donors ($10·7 billion). With exclusion of the latter two categories, innovative financing totals $6·3 billion, including solidarity levies from global taxes ($970 million, of which $580 million was from airline ticket tax) and funding from novel financing instruments such as Innovative Financing for Immunisation (IFFIm; $3·7 billion).[15]

In 2009, DAH, including non-ODA sources such as private foundations and non-governmental organisations (NGOs), was estimated to be $25·69 billion (in constant 2009 US$). Funding for HIV/AIDS, tuberculosis, and malaria[1] increased from $5·82 billion in 1990, to $10·86 billion in 2000, and to an estimated $26·66 billion in 2010. Disbursements for health, population, and reproductive health increased from $6·3 billion in 2002, to $17·0 billion in 2009. Among major health categories, NCDs received the least funding, albeit with growth from $30 million in 1990, to $230 million in 2008, and to $270 million in 2009, mostly from the Gates Foundation, which between 1999 and 2008 invested $207·2 million, largely targeted at reduction of tobacco use. Citizens (through private contributions to foundations and NGOs), corporations, and private foundations have funded an increasingly large share of DAH, rising from 8·5% of the $5·82 billion DAH in 1990, to 16·4% of the $10·86 billion in 2000, to an estimated 18% of the $25·69 billion in 2009. The Gates Foundation's share of DAH increased from 4% of total DAH in 2000, to 6·9% in 2010.[1]

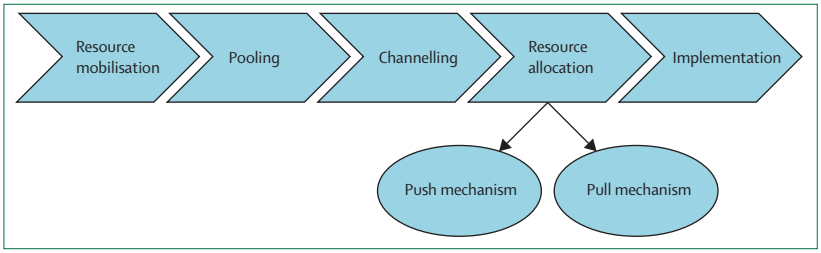

Figure 1: **Value chain framework for innovative financing**

What is innovative about innovative financing?

The High Level Taskforce on Innovative International Financing for Health Systems reviewed more than 100 innovative financing initiatives to identify airline tax,

tobacco tax, immunisation bonds, advance market commitments, and debt swaps as the most promising sources for new and additional financing.[16,17] Other studies have explored innovative financing mechanisms and their use in generation of new funds for global health.[5,18,19] However, only three of the innovative financing mechanisms—GAVI, the Global Fund, and UNITAID—have reached global scale in their operations and funding. These mechanisms have successfully used innovative approaches to mobilise, pool, channel, allocate, and disburse funding more effectively for medicines, vaccines, diagnostics, preventive interventions, and health systems in low-income and middle-income countries to address vaccine-preventable childhood diseases, maternal disorders, HIV/AIDS, tuberculosis, and malaria.

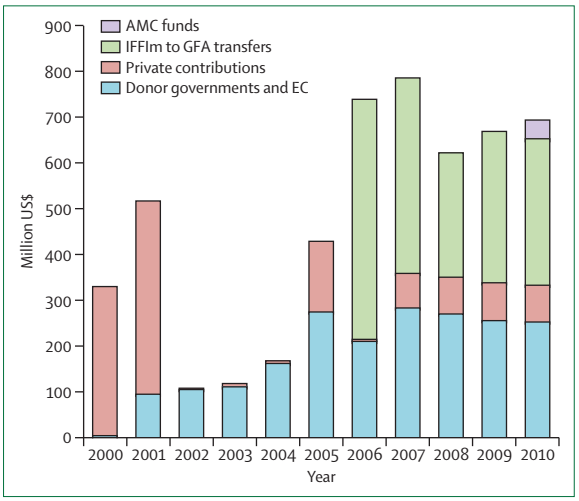

Figure 2: **Cash received by GAVI by year, 2000–10**[20]
AMC=Advance Market Commitment. IFFIm=Innovative Financing for Immunisation. GFA=GAVI Fund Affiliate. EC=European Commission.

GAVI

GAVI has innovated along the financing value chain by establishing new instruments for resource mobilisation; creating one system for pooling and channelling of funds; improving resource allocation by inclusion of civil society and the private sector in its decision making and by independent assessment of funding requests with use of a multidisciplinary review panel; channelling funds to national immunisation programmes or national health systems; and allocating funds according to need and results with a performance bonus to create incentives for improvement of programme implementation. It has integrated key elements along the value chain in an organisational form without country presence (unlike UN agencies that have regional and country offices).

GAVI is largely funded through IFFIm, an innovative way to use ODA, which involves issuing bonds in the capital markets to convert long-term government pledges to immediately available cash resources. These bonds are sold against legally binding long-term ODA commitments from the UK, France, Italy, Spain, Sweden, the Netherlands, Norway, and South Africa, which together have pledged to contribute $5·9 billion over 23 years. Between 2006 and 2010, IFFIm proceeds totalled $1·9 billion (figure 2). By creating a predictable demand pull (appendix), IFFIm addresses a major constraint to immunisation scale-up: the scarcity of stable, predictable, and coordinated cash flows for an extended period. This predictability of funding allows beneficiary low-income and middle-income countries and vaccine manufacturers to plan for longer periods, knowing that the necessary resources will be available.

By 2010, GAVI had also mobilised around $43 million through the Advance Market Commitment (AMC) for pneumococcal disease. Through the AMC donors commit to buy from vaccine makers new vaccines, once developed, at negotiated prices that cover development costs, on the provision that the vaccines meet stringent, pre-agreed criteria for effectiveness, cost, and availability, and that low-income and middle-income countries demand them. By guaranteeing an affordable long-term price, AMC supports sustained use of vaccines.

The total cash received by GAVI in 2000–10 amounted to $5·2 billion: 39% ($2·07 billion) from donor governments and the European Commission, 24% ($1·27 billion) from private contributions, 36% ($1·91 billion) from IFFIm, and 10% ($0·52 billion) from AMC funds.[21] Although support for IFFIm and AMC is predominantly from donor governments, these instruments are innovative financing methods for resource mobilisation and allocation.

The Global Fund

The Global Fund receives contributions predominantly from bilateral donors, with relatively modest contributions from private companies such as Chevron and Takeda, private philanthropic foundations such as the Gates Foundation, and innovative resource mobilisation approaches such as (PRODUCT)RED. The Global Fund, which emphasises country ownership, does not have country presence.

The Global Fund's key innovations along the value chain include novel instruments to mobilise innovative finance; one funding pool for the finances mobilised; enhanced resource allocation through inclusive governance that engages civil society, affected communities, and the private sector in decision making by independent assessment of funding requests with a multidisciplinary review panel; dual-track financing to channel funds to governments and non-governmental institutions; efforts to allocate funding according to need and to national programmes by emphasis of country ownership; and use of performance-based funding to create incentives to improve programme implementation.[22] The Global Fund has also attempted to improve the transparency of its results reported by grant recipients and verified by local fund agents for consistency with source documents,

albeit without independent assessments that validate the accuracy or validity of the reported results.

By June, 2011, almost $28·9 billion was pledged to the Global Fund by traditional donors, representing 95% of total pledges ($31·3 billion), with $1·4 billion (around 5% of the total) pledged by the private sector and from innovative financing initiatives (figure 3). The Gates Foundation accounted for most of the pledges from the private sector and innovative financing sources (figure 4). In 2005, when the Gates Foundation made no contributions, the proportion of the non-public sector funding fell to less than 0·05% ($0·75 million) of the total contributions that year (around $1·5 billion), compared with 3–6% (ranging on average from $50–100 million) of the total in the years when the Gates Foundation contributed (figure 4). Contributions from UNITAID, Communitas Foundation, Comic Relief, and Hottokenai Campaign are fairly small and limited to periods of 1 or 2 years (figures 2 and 4).

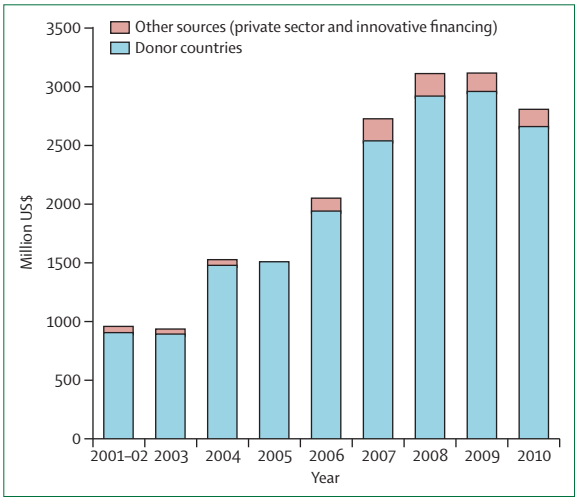

Figure 3: **Global Fund contributions by year, 2001–10**[23]

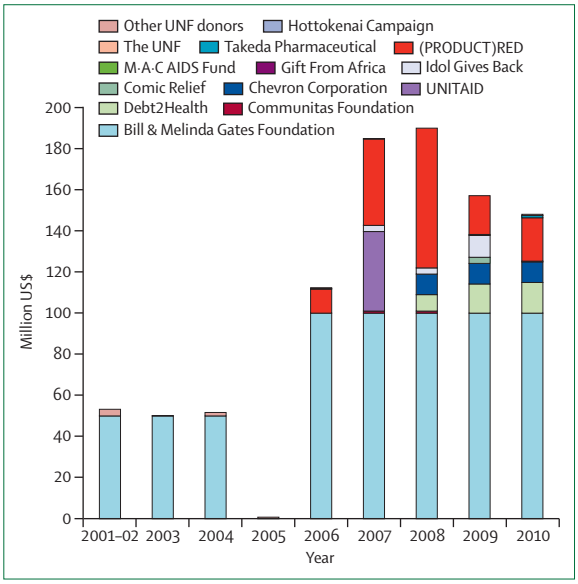

Figure 4: **Global Fund contributions from non-bilateral donors by year, 2001–10**[23]
UNF=UN Foundation.

(PRODUCT)RED is a brand licensed to companies, including American Express, Apple, Converse, Dell, Emporio Armani, Gap, Nike, Penguin Classics, and Starbucks. Each company produces unique (PRODUCT)RED items and donates up to half of their profits from these products to the Global Fund, which amounted to $162 million from January, 2006, to June, 2011. However, contributions from (PRODUCT)RED are unpredictable, with substantial yearly variation (figure 4).

The Debt2Health initiative, which had generated $37 million by 2011, involves creditors and debtor countries that are recipients of grants from the Global Fund. The Global Fund facilitates a three-party agreement in which creditors forgo repayment of a proportion of their claims, on the condition that the beneficiary country invests an agreed counterpart amount in health through programmes approved by the Global Fund as a one-time payment or as instalments corresponding to payments that are needed to service the debt. The Global Fund disburses the counterpart funds using the same systems as for regular grants. The signed Debt2Health agreements include Germany and Australia as creditor countries, and Côte d'Ivoire, Egypt, Ethiopia, Indonesia, and Pakistan as beneficiaries.

UNITAID

UNITAID was established in 2006 to raise additional funds for global health and to complement efforts to expand treatment of HIV/AIDS, malaria, and tuberculosis in low-income and middle-income countries. UNITAID does not have country presence. It has one pool for resources, uses a multistakeholder governance structure for allocation of resources, and channels funds through multiple routes to programmes in countries.

By the end of 2010, UNITAID raised about $1·3 billion, around 70% ($910 million) of which was derived from a small levy imposed in six countries on airline tickets (Chile, France, Madagascar, Mauritius, Niger, and South Korea). The funding from solidarity tax is complemented by multiyear contributions from Brazil, Spain, the UK, France, and the Gates Foundation. France and the Gates Foundation have contributed more than 60% (around $780 million) of the total revenue of UNITAID (figure 5). In partnership with the Clinton Foundation, UNITAID has secured substantial reductions in the price of second-line AIDS treatments and for paediatric antiretroviral medicines, ranging from 25% to 50%.

Discussion

We apply the value chain framework to analyse international innovative financing for health. We examine the Global Fund, GAVI, and UNITAID as three examples of

www.thelancet.com Published online October 24, 2012 http://dx.doi.org/10.1016/S0140-6736(12)61460-3

innovative integrated financing mechanisms for health that have worked at scale. Although our analysis focuses on international innovative financing, our framework can be used to analyse domestic innovative financing.

Our analysis shows the contribution of innovative financing to be surprisingly small compared with bilateral and multilateral ODA. Although GAVI, the Global Fund, and UNITAID used innovative means to raise new resources, these amounts are relatively small when compared with official ODA, amounting to less than $1·8 billion in 2000–10 (around $440 million for GAVI, $950 million for the Global Fund, and $330 million for UNITAID), accounting for 6·7% of the estimated $27 billion in DAH. Instead, real innovation in innovative financing has been the establishment of new organisational forms as integrated financing mechanisms to more effectively and efficiently mobilise, pool, allocate, and channel financial resources to low-income and middle-income countries and create incentives to improve implementation and performance of national programmes. By bringing together the key elements of the value chain, these three organisations have added value to the end product—namely, rapid channelling of new additional funding for health at scale for better health outcomes in countries of low and middle income.

GAVI and the Global Fund largely depend for funding on ODA, with relatively large sums received from one philanthropic institution; by contrast, UNITAID, which has benefited from strong bilateral support by the French Government in the establishment of the airlines tax, has successfully used several new sources to generate innovative financing. UNITAID has strategically targeted areas where it could best leverage its funds—eg, by substantially affecting prices of medicines and diagnostics, and by funding medicines to treat multidrug-resistant tuberculosis and antiretroviral treatment for children in programmes supported by the Global Fund.

Harnessing of integrated innovative financing mechanisms to strengthen health-system functions through a diagonal approach (when investments in targeted interventions are used to drive the necessary improvements into the health-care system) offers the potential to create greater synergies to address under-resourced areas of health need in low-income and middle-income countries.[25,26] This approach is especially important since few initiatives have reached global scale in operations and financing. Indeed, since 2006, GAVI and the Global Fund have driven expansion of maternal and child health financing,[2] and by funding health systems have enabled many low-income and middle-income countries to strengthen primary care services to address several diseases.[27–29] Innovative integrated financing mechanisms could be used to address the growing NCD burden, for example, by use of solidarity taxes on unhealthy foods, drinks, and tobacco, as proposed by WHO.[30]

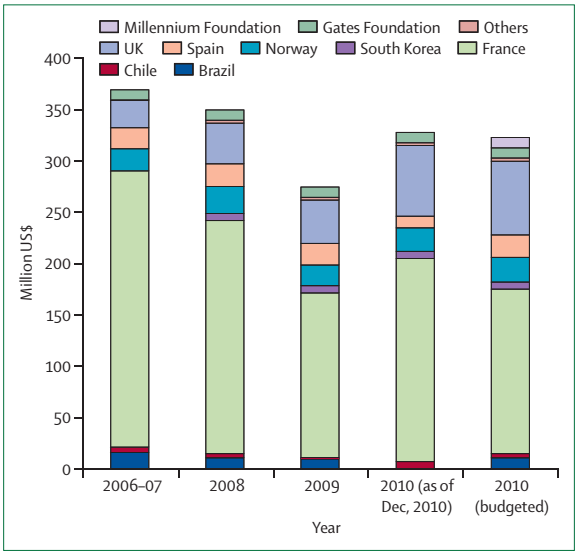

Figure 5: **UNITAID revenues by year, 2006–10**[24]

The notion of innovative financing is a decade old, but the hype around it has not translated to substantial new funding. Although we strongly believe that innovative financing offers real potential for new international financing, we identify three major risks with this approach that warrant further consideration. The first risk relates to excessive expectations about the yield and sustainability of innovative financing. Despite the number of innovative financing schemes launched for health, most have remained small, with only three reaching global scale. The second risk concerns high start-up costs associated with setting up a new scheme and low revenues realised by new schemes. For example, in 2010, UNITAID provided around $22 million to the Millennium Foundation to create the brand MASSIVEGOOD with a donation platform for deployment in the travel industry to raise finances through voluntary contributions of travellers. However, only a fraction of investment was recovered in revenues, and the initiative was discontinued in November, 2011.[31] The third risk relates to the volatility of funding. The case of the Global Fund shows high volatility in the contributions from non-bilateral donors (figure 4), especially when there is a high dependence on one or two large non-traditional donors. GAVI established IFFIm as an innovative instrument to increase predictability of its donor funding. Similar instruments are needed to reduce volatility of bilateral donor financing. Despite their volatility, contributions from innovative financing sources can gradually help to reduce the dependence on official contributions, especially if these sources can be diversified.

Our findings show that the resources mobilised from international innovative financing are modest when compared with donor assistance from traditional

sources. A limitation of our study, because of the absence of data, is not being able to ascertain whether and to what extent the innovative financing mechanisms have improved outcomes compared with traditional approaches of funding using DAH. Research is urgently needed to address this important evidence gap. In the near term, in view of the global economic downturn, mobilisation of substantial new funds from innovative financing sources will be challenging. The start-up costs and the competencies needed for a new innovative financing scheme to operate and generate substantial resources should not be underestimated. In an environment marked by increasing scarcity of resources, caution should be exercised when establishing new international innovative financing schemes. Instead, global leaders and donors should explore more critically how the existing integrated innovative financing mechanisms can be strengthened and used effectively to achieve more health gain for money, and at the same time additional money for health.

Contributors

RA conceived the study and developed the conceptual framework in collaboration with FMK and JF. RA and YA wrote the first draft with input from FMK and JF. YA collected and analysed data with input from RA. RA revised the report and wrote the final version with input from FMK and JF. All authors have seen and approved the final version.

Conflicts of interest

RA, FMK, and JF declare that they have no conflicts of interest. YA is employed by the Global Fund.

References

1 Institute for Health Metrics and Evaluation. Financing global health 2011: continued growth as MDG deadline approaches. Seattle: Institute for Health Metrics and Evaluation, 2010. http://www.healthmetricsandevaluation.org/sites/default/files/policy_report/2011/FGH_2011_full_report_medium_resolution_IHME.pdf (accessed Dec 20, 2011).

2 Pitt C, Greco G, Powell-Jackson T, Mills A. Countdown to 2015: assessment of official development assistance to maternal, newborn, and child health, 2003–08. *Lancet* 2010; **376:** 1485–96.

3 Stover J, Korenromp EL, Blakley M, et al. Long-term costs and health impact of continued Global Fund support for antiretroviral therapy. *PLoS One* 2011; **6:** e21048.

4 Frenk J, Horton R. Evidence for health-system reform: a call to action. *Lancet* 2006; **368:** 3–4.

5 Hecht R, Palriwala A, Rao A. Innovative financing for global health. A moment for expanded US engagement? Washington: Center for Strategic and International Studies, 2010. http://csis.org/files/publication/100316_Hecht_InnovativeFinancing_Web.pdf (accessed Dec 15, 2011).

6 Gates B. Innovation with impact: financing 21st century development. A report by Bill Gates to G20 leaders, Cannes Summit; November, 2011. http://www.thegatesnotes.com/Topics/Development/G20-Report-Innovation-with-Impact (accessed Nov 18, 2011).

7 United Nations. Monterrey consensus of the international conference on financing for development. New York: United Nations, 2003. http://www.un.org/esa/ffd/monterrey/MonterreyConsensus.pdf (accessed March 28, 2011).

8 Shumpeter JA. Business cycles (vol I). New York: McGraw Hill, 1939.

9 Simonetti R, Archibugi D, Evangelista R. Product and process innovations: how are they defined? How are they quantified? *Scientometrics* 1995; **32:** 77–89.

10 Atun RA, Gurol-Urganci I, Sheridan D. Uptake and diffusion of pharmaceutical innovations in health systems. *Int J Innov Mgt* 2007; **11:** 299–321.

11 Porter ME. Competitive advantage: creating and sustaining superior performance. New York: The Free Press, 1985.

12 WHO. The World Health Report: health systems financing: the path to universal coverage. Geneva: World Health Organization, 2010. http://www.who.int/whr/2010/en/index.html (accessed June 3, 2012).

13 Murray CJL, Anderson B, Burstein R, et al. Development assistance for health: trends and prospects. *Lancet* 2011; **378:** 8–10.

14 Organisation for Economic Co-operation and Development. Creditor reporting system: aid activities. http://www.oecd-ilibrary.org/development/data/creditor-reporting-system/aid-activities_data-00061-en?isPartOf=/content/datacollection/dev-cred-data-en (accessed Oct 2, 2012).

15 Girishankar N. Innovating development finance: from financing sources to financial solutions. Policy Research Working Paper 5111. Washington: World Bank, 2009. http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2009/11/03/000158349_20091103112908/Rendered/PDF/WPS5111.pdf (accessed March 23, 2011).

16 Taskforce on Innovative International Financing for Health Systems. More money for health, more health for the money. Final report of the Taskforce on Innovative International Financing for Health Systems, 2009. http://www.internationalhealthpartnership.net/fileadmin/uploads/ihp/Documents/Results___Evidence/HAE__results___lessons/Taskforce_report_EN.2009.pdf (accessed Oct 3, 2012).

17 Fryatt R, Mills A, Nordstrom A. Financing of health systems to achieve health Millennium Development Goals in low-income countries. *Lancet* 2010; **375:** 419–26.

18 De Ferranti D, Griffin C, Escobar ML, Glassman A, Lagomarsino G. Innovative financing for global health: tools for analyzing the options. Global Health Financing initiative Working Paper 2. Brookings Global Economy and Development, 2008. http://www.ghtcoalition.org/files/Innovative_financing_for_global_health_Brookings.pdf (accessed Nov 18, 2011).

19 Leading group on Innovative Financing for Development. What is innovative financing? February, 2009. http://www.leadinggroup.org/article194.html (accessed May 31, 2012).

20 GAVI Alliance. Funding and finance. http://www.gavialliance.org/funding/ (accessed Oct 3, 2012).

21 GAVI Alliance. Key figures: donor contributions & pledges, 2011. http://www.gavialliance.org/funding/donor-contributions-pledges/ (accessed Aug 8, 2011).

22 Atun R, Kazatchkine M. Promoting country ownership and stewardship of health programs: the Global Fund experience. *J Acquir Immune Defic Syndr* 2009; **52:** S67–68.

23 The Global Fund. Donors and contributions: http://www.theglobalfund.org/en/about/donors/ (accessed Oct 3, 2012).

24 UNITAID. Financial reports. http://www.unitaid.eu/resources/publications/financial-reports (accessed Oct 3, 2012).

25 Knaul FM, Gralow J, Atun R, Bhedelia A. Closing the cancer divide: an equity imperative. Cambridge, MA: Harvard Global Equity Initiative and Harvard University Press, 2012.

26 Sepulveda J, Bustreo F, Tapia R, et al. Improvement of child survival in Mexico: the diagonal approach. *Lancet* 2006; **368:** 2017–27.

27 Vujicic M, Weber SE, Nikolic IA, Atun R, Kumar R. An analysis of GAVI, the Global Fund and World Bank support for human resources for health in developing countries. *Health Policy Plan* 2012; published online Feb 13, 2012. DOI:10.1093/heapol/czs012.

28 Atun R, Pothapregada SK, Kwansah J, Degbotse D, Lazarus JV. Critical Interactions Between the Global Fund–Supported HIV Programs and the Health System in Ghana. *J Acquir Immune Defic Syndr* 2011; **57** (suppl)**:** S72–76.

29 Rasschaert F, Pirard M, Philips MP, et al. Positive spill-over effects of ART scale up on wider health systems development: evidence from Ethiopia and Malawi. *J Int AIDS Soc* 2011; **14** (suppl)**:** 1–10.

30 WHO. The solidarity tobacco contribution. Discussion paper. Geneva: World Health Organization, 2011. http://www.who.int/nmh/events/un_ncd_summit2011/ncds_stc.pdf (accessed June 4, 2012).

31 Millennium Foundation for Innovative Finance for Health. MASSIVEGOOD: who we are, Nov 24, 2011. http://www.millenium-foundation.org/?page_id=16 (accessed May 31, 2012).