



PRINCIPLES OF SHARED RESPONSIBILITY

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10 OXFORD POLICY MANAGEMENT DECEMBER 2013

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POLICY BRIEF #1: SHARED RESPONSIBILITY FOR FINANCING THE GLOBAL HIV RESPONSE

Produced by: Oxford Policy Management (OPM) - APW with UNAIDS 2016/637467



1. Synopsis

In recent years, funding for HIV has shifted fundamentally. International funding from OECD countries has slowed considerably since 2007, while domestic public investment has risen steadily since 2005.

However, there are large inequities between the contributions different countries make, and also large differences between countries with regard to the severity of their HIV epidemics, to their ability to pay from domestic resources and the extent to which the HIV response is seen as a public responsibility.

In this brief, we look at the global principles that could help define a “fair share” of the cost of treating HIV that explore the extent to which the HIV response should be publicly-funded, and so that it is distributed fairly between high, middle and low-income countries.

The response to HIV is a diverse set of activities. Here we propose an economic argument that some components may be regarded as ‘public goods’ that justify a publicly funded response. Others fulfill the definitions - by global consensus - of ‘merit goods’, which also justify public intervention in the market,

and therefore a public and shared responsibility to help.

The global nature of the epidemic and its dire consequences means there is also a shared responsibility between countries. This has been implicitly accepted by the global community and demonstrated through international declarations, and the mobilisation of unprecedented levels of international funding.

This new emphasis on a “shared responsibility” that features a larger contribution from domestic sources requires greater examination of how much of the resource requirements can be met with domestic financing without causing undue harm to other priorities and whether resource gaps could be eliminated if, in addition, international aid was spent where it is truly needed most.

We present possible methods for benchmarking levels of domestic investment that use indicators designed to provide possible criteria for reallocating budgets within countries, as well as reallocating international assistance between countries.

2. Is the response to HIV a public responsibility?

Much of the debate about shared responsibility for the provision of health services in general, or HIV services in particular, refers ultimately to whether or not health service provision might be regarded as a “public good”, or alternatively a “merit good” (see boxes). The key observation is that the response to HIV entails a diverse

set of activities, some of which are public goods while others are private goods. For example, commodities such as ART and condoms, are clearly private goods that would be and are provided by a free market. Table 1 gives an illustration of how one might classify the principal components of the response.

PUBLIC GOODS

Economists define public goods in terms of two important attributes:

1. Public goods are “**non-rival**”. This means that they can be shared by additional people without affecting existing consumers. It therefore costs nothing to provide them to additional people, and this is often used as an argument that they should be provided for free.
2. Public goods are also “**non-excludable**”. This means that they are available to anyone once they have been provided – so no-one has an incentive to pay for them.

The private sector has no incentive to provide public goods, because it is not possible to charge for providing them. The most common examples are laws, human rights or public infrastructure

MERIT GOODS

Merit goods have two main attributes:

1. Merit goods confer **long-term benefits**, which lie in the future and are under-recognised at the time of consumption
2. Merit goods generate **significant benefits to others** – not only to the person consuming them. For example, health and education benefit the families of the people receiving them, and bring welfare and economic benefits in the future – these accrue to the whole of society.

For both of these reasons, merit goods tend to be under-consumed in a free-market system – people do not want to pay for them in the quantities that government considers desirable. Public provision is therefore justified

T.1 A POSSIBLE CLASSIFICATION OF THE HIV RESPONSE AS A PUBLIC GOOD

	NON-EXCLUDABLE	WEAKLY EXCLUDABLE	STRONGLY EXCLUDABLE
Non-rival	Purely Public Goods <ul style="list-style-type: none"> • mass media • public campaigns • political advocacy • legal reform • human rights 	Public Enterprise Goods <ul style="list-style-type: none"> • research and innovation • economic benefits of treatment and prevention 	
Weakly Rival		<ul style="list-style-type: none"> • Community mobilisation • Synergies with development sectors 	Club Goods <ul style="list-style-type: none"> • vulnerable population outreach • youth programmes
Strongly Rival	Common Pool Goods		Purely Private Goods ART drugs, condoms, vaccines Services – PMTCT, circumcision, VCT

The central point of the table, however it is arranged, is that no pure definition of public or private goods can cover all of the response. However, it is also clear that the components that satisfy the attributes of private goods also satisfy the attributes of merit

goods – in that they generate significant current and future welfare and economic benefits to individuals and society as a whole. This applies to many of the core treatment and prevention programmes of the HIV response.



This means that there is a clear justification for public-sector intervention in the response to HIV. This implies in turn that the responsibility

for the response is in part a public one – it is shared across the whole of society within affected countries.

3. Is the response to HIV an international responsibility?

The International Task Force on Global Public Goods, set up in 2003, provided a definition of a global

public good. This involved three main criteria, which are in fact more characteristic of a merit good:

GLOBAL PUBLIC GOODS

1. *It is broadly conceived as important to the international community*
2. *It cannot or will not be adequately addressed by individual countries acting alone*
3. *It is defined through a broad international consensus or legitimate decision process*

All of these criteria are met by the HIV response, as reflected by the unprecedented levels of international resource that have been committed, and the consensus expressed in several UN declarations. Shared responsibility for the HIV response is already

a long-standing and accepted principle within the international community. Perhaps the most important question is not whether responsibility should be shared, but rather how can it best be shared to maximise its effectiveness.

4. How should responsibility be shared?

Many countries do not have the resources to address HIV adequately, given the extreme imbalance in the distribution of the virus across countries and the imbalance in income levels across countries. The core question is whether it is possible to define the “right” mix of domestic and international investment in any particular country. In other words, is there an

acceptable “benchmark” or “metric” for the amount that countries might be able to invest in the future from their own resources, and that could be used as a basis for defining the responsibility of the international community to provide additional assistance? Some possible metrics are described below.

5. Peer benchmarks – comparing countries to each other

A peer benchmark compares the levels of domestic investment in a country with that of other countries with similar circumstances. Such a benchmark would be expected to relate to the income level of affected countries, to their capacity to provide and sustain the necessary services, and to the magnitude of the HIV epidemic that they are experiencing.

One such benchmark is the DIPI index, developed by UNAIDS. This compares the level of investment in a country to the size of the government budget and a measure of disease burden represented by the number of people living with HIV:

$$\text{DIPI} = \frac{\text{PUBLIC EXPENDITURE ON HIV / AIDS}}{\text{GOVERNMENT REVENUE}}$$

The DIPI index ranks countries by comparing their budget commitment to the disease burden of HIV – countries with higher prevalence would be expected to spend more of their budget on the HIV response. Some higher-income countries might however be able to provide all of the resource needs

for HIV programmes out of domestic budgets with a relatively low value for the DIPI index. The DIPI comparisons are only valid in practice for low- and lower-middle income countries.

An alternative version¹ uses the proportion of disability-adjusted life years (DALYs) from HIV to DALYs from all causes to express the disease burden. This “DALY share” version of the DIPI produces similar country rankings, but an additional drawback is that high investment

in HIV will ultimately reduce the DALYs from HIV, so it becomes difficult over time to distinguish between “high performing” and “low performing” countries where DALYs are high because of low investment.

Other approaches have used statistical techniques in order to produce peer benchmarks that take account of a larger number of country attributes² and offer a refinement of the peer comparisons – but have greater data requirements.

6. Peer-independent benchmarks – defining objective standards

Another approach is to set objective benchmarks as targets for policy. For example a benchmark for “affordability” based on HIV investments as a percentage of GDP – a level above 1% – has been suggested as unaffordable³. The Abuja target

recommends that African countries should spend 15% of their government budget on health, and this has been widely used for domestic advocacy in African countries. Similar benchmarks could be proposed for HIV investments.

7. Using benchmarks to assess fair share

The second (DALY share) version of the DIPI has been used with some caveats in conjunction with the Abuja target to illustrate the level of budgetary effort in a sample of 12 countries in sub-Saharan Africa with high HIV prevalence in order to establish benchmarks for the levels of domestic investment that would be both appropriate and feasible⁴. The authors point out that “such metrics could enhance transparency and accountability for efficient use of money and maximise the effect of available funding to prevent HIV infections and save lives”¹.

No single benchmark is without flaws, and will require careful interpretation in the light of other country-level circumstances, whether economic or political, but a joint application of these approaches coupled with country-level engagement have the potential to provide a solid basis for defining and agreeing what is meant by a “fair share”, both for country governments, and for donors. The application of benchmarks clearly requires consensus, since it has implications for budget allocations, tax policy and “fiscal space” more generally.

8. Conclusions

There is an international consensus that the response to HIV is a global merit good that requires a collective international response. This brings with it an acceptance of shared responsibility. This implies that we need to examine both domestic and international investments and quantify the terms of that responsibility.

Domestic expenditure on HIV can continue to increase as economies grow, but domestic financing is always going to be limited by economic capacity, especially in low-income countries. On top of this, some countries

are already allocating as much as can reasonably be expected. As a result, many low and middle-income countries have gaps they simply cannot fund.

This means that the continued and sustained commitment of traditional donors is crucial. It is however possible to devise acceptable benchmarks that will help to do two key things - define the most appropriate mix within countries of domestic and international financing, and also to help to ensure that international financing is distributed to best effect.

¹ See Resch, Rickman and Hecht, “Funding AIDS programmes in the era of shared responsibility: an analysis of domestic spending in 12 low-income and middle-income countries”, *Lancet Glob Health* 2015, 3: e52–61

² See Galarraaga O, Wirtz VJ, Santa-Ana-Tellez Y, Korenromp EL (2013) Financing HIV Programming: How Much Should Low- And Middle-Income Countries and their Donors Pay? *PLoS ONE* 8(7): e67565. doi:10.1371/journal.pone.0067565

³ See Williams B G, Gouws E. Affordability, Cost and Cost-Effectiveness of Universal Anti-Retroviral Therapy for HIV. Cornell University Library [Internet]. 2012 June; arXiv: 1206.6774 [q-bio OT]. Available from: <http://arxiv.org/abs/1206.6774>

⁴ For example the HIV investment as share of GDP;

SHARED RESPONSIBILITY FOR FINANCING THE GLOBAL HIV RESPONSE

Produced by: Oxford Policy Management (OPM) - APW with UNAIDS 2013/316170



1. Summary

The purpose of this paper is to describe the global principles that could underlie the definition of “fair share” between high, middle and low-income countries in the financing of the global response to HIV, and to set this in the context of the current financing architecture and the potential for future increases in both financing and the efficiency and effectiveness of service delivery.

Although growth in international funding from OECD countries has slowed considerably since 2007, domestic public investment has continued to rise steadily since 2005. There are however large inequities between the contributions and ability to pay of different countries, both in the OECD high-income countries, and in the low and middle-income countries where the HIV epidemic is concentrated.

The paper presents an economic argument that the response to HIV is a diverse set of activities, some of which may be regarded

as public goods justifying a publicly funded response. The remaining components fulfill the definitions, by global consensus, of merit goods, which also justify public intervention in the market, and therefore a public and shared responsibility for a response. The global nature of the epidemic and its consequences also implies a shared responsibility between countries – one that has been implicitly accepted by the global community through international declarations, and the mobilisation of unprecedented levels of international funding.

The paper presents a method for benchmarking the levels of domestic investment using the index of domestic priority (DIPI) developed by UNAIDS. This illustrates the difference in levels of commitment between countries, and suggests possible criteria for budget reallocation within those countries, and international assistance reallocation between countries. These reallocations

are however unlikely to close the existing unfunded gaps if current target levels of coverage are to be met.

The paper concludes with a discussion of the potential of future gains in efficiency and effectiveness to close the remaining resource

gap. Current trends indicate that such gains can offer more than financing increases, but that these improvements will be progressive and steady, rather than dramatic. The unfunded gap to meeting the 2015 targets will therefore require a short-term increase in the level of international investment.

2. Introduction

a) Background

The international response to HIV has been unprecedented in the history of public health, both from the high-income OECD countries who currently provide more than \$8 billion per annum to finance HIV prevention, AIDS treatment and mitigation in low and middle-income countries, but also from the affected country governments themselves, who collectively provide a similar and steadily growing amount. In that sense, we can see that the responsibility for financing the global response to HIV is, in reality, shared – although a closer look reveals a high degree of inequity between countries in the amounts committed. The financing architecture of HIV is dominated by a small number of countries, either donor countries from the OECD, or those middle-income countries with large epidemics. This is related to three main factors – first, the extreme inequity in the distribution of HIV infection – the countries of southern and eastern Africa have prevalence rates that are beyond anything previously imaginable for an infectious disease; second to the extreme inequity in the distribution of income across countries, and third to the nature of HIV itself.

HIV has many unique features that set it apart from other global public health and development challenges. First, it is a persistent or long-wave event – the average length of time between initial infection and the appearance

of debilitating symptoms is as much as 8 years, and with the current generation of anti-retroviral medicines, people living with HIV can expect to live long and productive lives provided they receive on-going treatment. Second, HIV is transmitted primarily through unprotected sex or through the use of infected needles, and in many countries is most prevalent among people who are socially marginalised, such as drug users, sex workers or men who have sex with men who face difficulty in accessing social services. Third, the cost of treatment for AIDS has historically been high – meaning that it is not affordable by poor people, or by the Governments of poor countries – many of which have high rates of prevalence.

In the context of the global economic downturn precipitated by the financial crisis in 2007, there is perceived pressure on international funding for development in general, which has also been felt in the area of HIV. It has in addition led to a closer examination of the pattern of current financing, whether there would be better or fairer ways to share it, and whether there are alternative sources of funding that would work better. This applies in particular to the idea of “fair share” – is there a general underlying principle that could be applied to help decide what would be the “right” distribution of financing responsibility between or within countries? The purpose of this paper is to explore this question.

b) Outline

The paper summarises the current trends and patterns of global HIV financing, then explores the economic definitions of public or merit goods as a possible basis

for the definition of fair share. The final part of the paper provides an example of a particular benchmark developed by UNAIDS for assessing the levels of contribution and future potential of domestic financing.

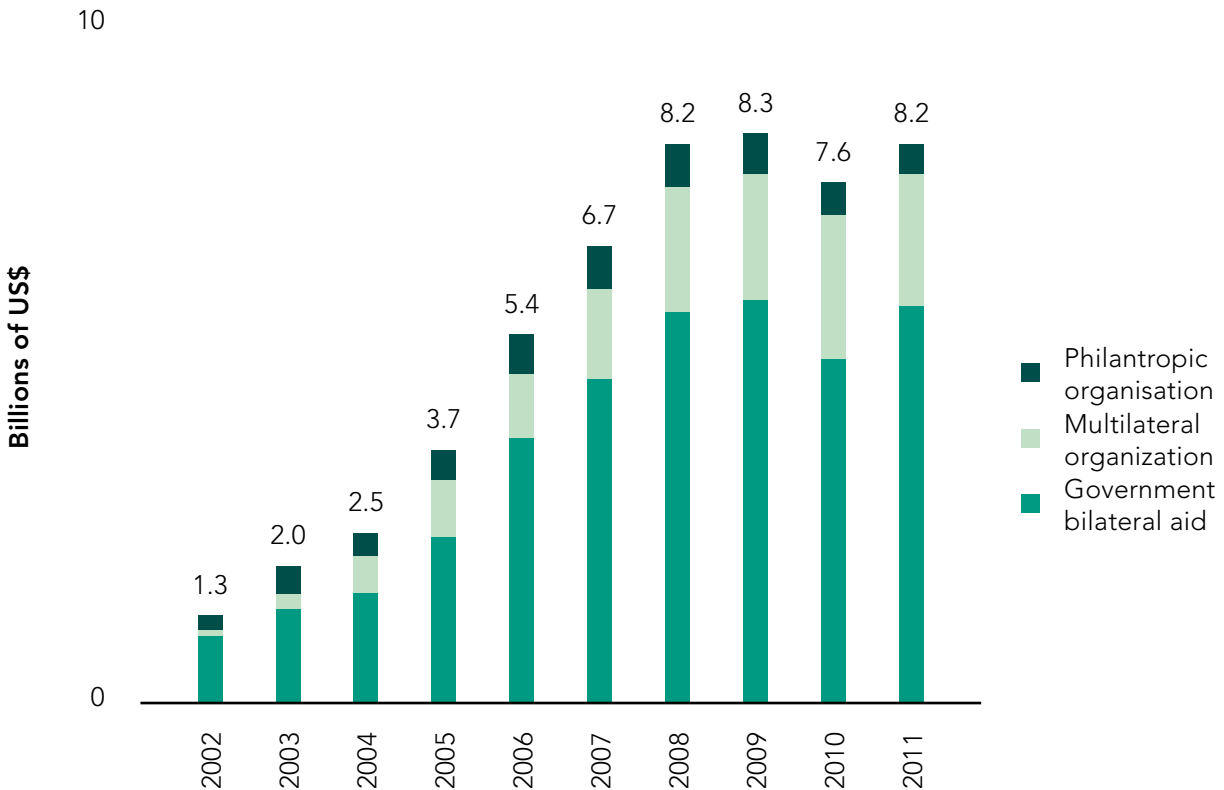
3. Trends and patterns in HIV financing

After many years of steady growth, international financing for HIV levelled off between 2008 and 2011, at a little above \$ 8 billion per annum, as shown in Figure 1 below. In fact, the recently produced estimate from

UNAIDS for 2012 indicates a global total of about \$ 8.7 billion (the breakdown was not available for this chart), which has restored an upward trajectory to the global financing picture.

F.1

LEVELS OF EXTERNAL FINANCING FOR HIV, 2002-11

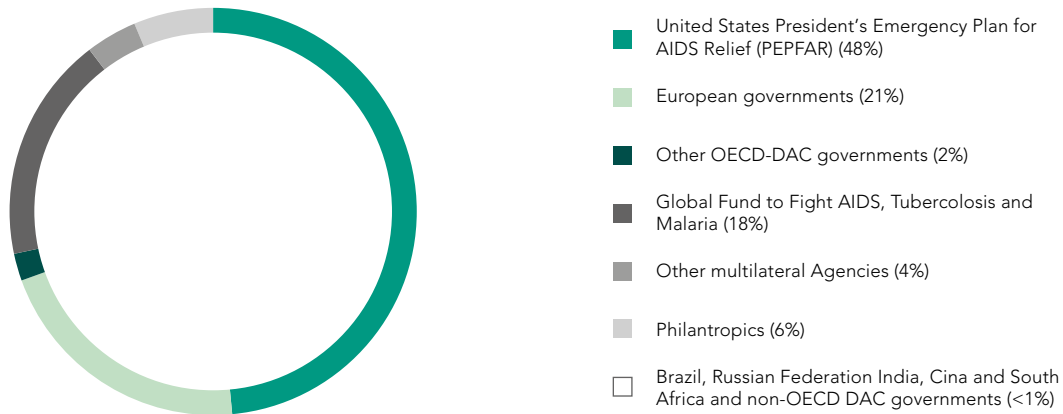


Note that the bulk of this amount is from Government bilateral aid – indeed almost half of the total

amount comes from the United States PEPFAR programme, as shown in Figure 2 below:

F.2

SOURCES OF INTERNATIONAL FINANCING FOR HIV, 2011



UNAIDS estimates indicate however that domestic financing has continued to grow steadily since 2005, as shown in Figure 3 below. These estimates are based on analysis of partial data coverage, with

interpolation and some extrapolation to 2012, but almost certainly give an accurate picture of the global trend (although there needs to be caution in interpreting the estimates for individual countries).

F.3

TREND IN DOMESTIC FINANCING FOR HIV, 2005-12

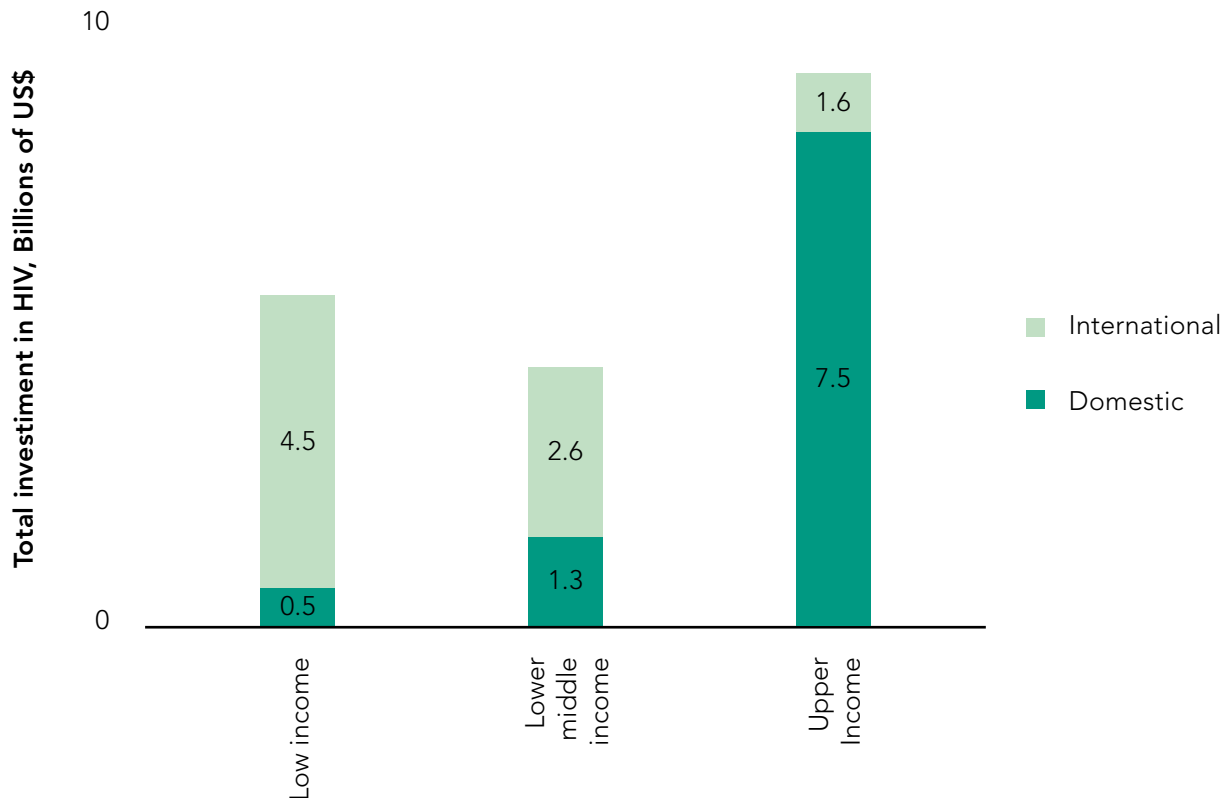


Note however that just over 80% of the global domestic financing is in upper-middle income countries, which can be largely accounted for by three in particular – South Africa (24%), Brazil (11%) and the Russian Federation (10%) – collectively accounting for almost half of the global total of domestic financing. 35 low-income countries account for only 7% of the global total, and 49 lower-middle income countries only 12%.

The pattern of financing by national income level is shown in Figure 4 below. As can be seen, about 52% of international financing is directed to low-income countries and 30% to lower-middle income countries. Most of the remaining 18% to upper-middle income countries was in fact disbursed to South Africa, the country with the highest burden of HIV in the world:

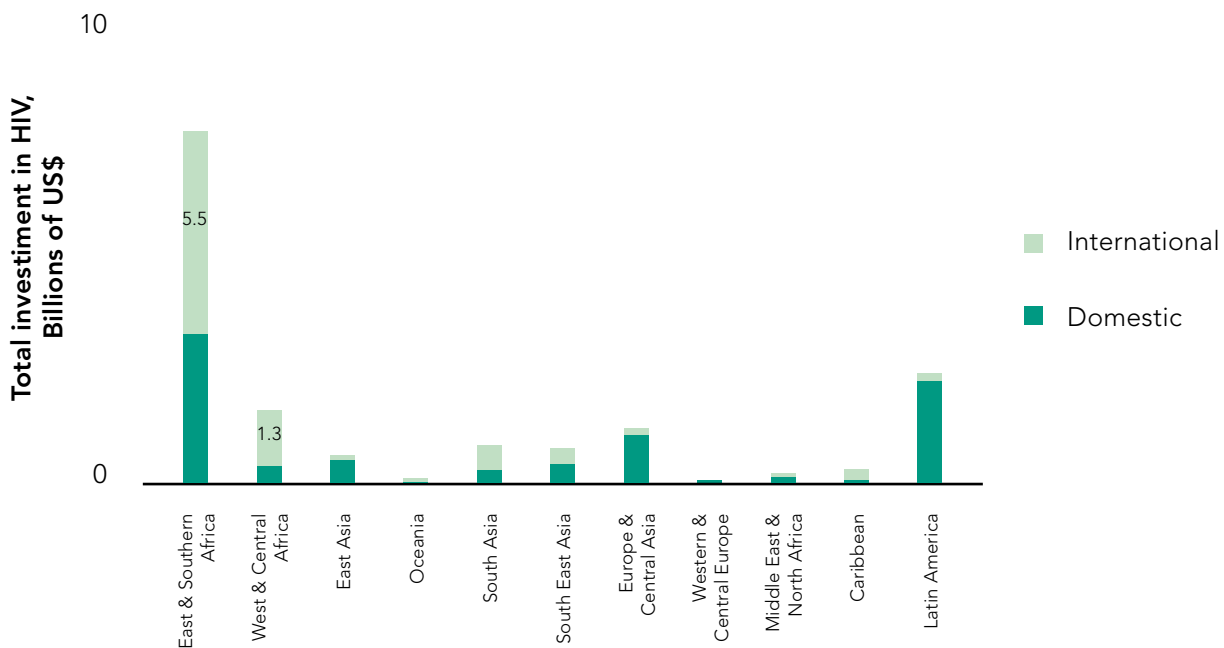
F.4

INCOME DISTRIBUTION OF INTERNATIONAL FINANCING FOR HIV, 2012



As might be expected, most of the international financing is directed towards the highest-prevalence countries in Africa, as shown in Figure 5 below, which also shows that almost all of the financing in Europe, Central Asia and Latin America is from domestic sources.

Given these global patterns, the question arises as to whether they constitute a “fair share” across countries. The following section explores a possible basis in economic theory for addressing this question.



4. Who should be responsible for providing a response to HIV?

Much of the debate about shared responsibility for the provision of health services in general, or HIV services in particular, refers ultimately to whether or not health service provision might be regarded as a “public good”, or alternatively a “merit good”. Both terms are understood in different ways, and often not distinguished from each other. It is worth briefly examining the case for classifying the HIV response in either of these two categories.

a) Public Goods

Public goods are defined by economists in terms of two important attributes:

1. Public goods are “non-rival”. This means that they can be shared by additional

consumers without reducing the quantity being consumed by existing consumers. The most common examples are laws (and by extension, human rights), or public infrastructure such as street lighting. From an economic point of view, this implies that the marginal cost of producing for an additional consumer is zero, so that any price that is more than zero will have the effect of reducing consumption, and reducing the welfare of consumers. This is often used as an argument that they should be provided for free.

2. Public goods are also “non-excludable”. This means that the producer cannot prevent people from consuming them once they have been provided. Therefore, if the producer wishes to charge a price



for consumption, consumers have an incentive to “free ride”, meaning that they do not have to pay, since they cannot be prevented from consuming for free.

It is important to note that many goods are neither purely rival nor purely excludable. Both attributes may exist to some degree, either strongly or weakly. For example, a public education campaign may be in the form of mass media or posters, which is neither rival nor excludable, or may be targeted to some extent to certain neighborhoods or populations, thereby becoming partially excludable.

The result of these two attributes in their purest forms is that they will not in general be provided by a free-market economy, since it is not possible for firms to receive payment for them. They can only be provided by means of public sector intervention, either through direct provision, or through subsidies or regulation.

The extent to which there is a normative “responsibility” on the public sector to intervene in the supply of public goods depends on the extent to which the services in question are regarded as important, desirable or essential. This leads to a considerable overlap with another category, termed “merit goods”

b) Merit Goods

Merit goods are goods that would in fact be provided by a free-market system, but not in the quantities that are considered to be sufficient or desirable. It is often argued that this condition applies to education in particular, but also to health care.

Merit goods are generally under-provided in a free market because of two main attributes:

1. Merit goods usually confer long-term benefits to the consumer. However, at the time of consumption, the full benefit to the person consuming the good is not always fully recognised – often because these

benefits lie in the future, and therefore cannot be regarded as certain. From an economic standpoint, there is a failure of information with regard to expected benefits, so that there would be an expectation that they will be under-consumed.

2. Merit goods usually generate significant benefits to others, or to society as a whole – not only to the person consuming them. For example, both health and education lead to benefits to the immediate families of the people receiving the services, and to improved productivity and economic benefits in the future – these accrue to the whole of society. In economic terms, merit goods generate “positive externalities”. This also leads to under-consumption, to the extent that consumption is motivated by purely private benefits to the individual consumer.

Note that normative considerations are central to the definition of merit goods – they are under-provided in relation to a public perception of what is desirable or essential. Many governments intervene in the market for merit goods on the basis of this social consensus, either by taking measures to increase their supply, or to increase the demand for them.

The common measures to increase supply might be:

- Provide a direct subsidy to producers – this encourages more production without discouraging consumption through a rise in price
- Provide indirect subsidies to producers – for example by providing free training, or providing some of the inputs for free (such as anti-retroviral drugs)
- Direct public provision of goods or services, through state or public enterprises. This is often the case for example with education

- Provide incentives to providers to produce more, for example through conditional grants, or performance-based payments

consume more of the merit good. This applies for example to prevention campaigns and youth programmes.

Common measures to increase demand might be:

- Intervene directly in the price to consumers, either by direct provision that is free at the point of delivery, or by a subsidised price that requires some degree of co-payment. This clearly applies to many of the commodities used for treatment and prevention of HIV, which are too expensive to be affordable to poor people in countries affected by HIV
- Provide direct subsidies in the form of vouchers or cash transfers with some degree of targeting
- Provide public education or public campaigns to encourage people to

c) Is the HIV Response a Public Good or a Merit Good?

The key point is that the response to HIV involves a diverse set of activities that are delivered in diverse circumstances. It is not in general possible to classify the entirety of the HIV response as being a purely public good – indeed, some components of the response, such as ART, are clearly private goods that are both rival and excludable that would be and are provided by a free market. The following table gives an illustration of how one might classify the principal components of the response, based upon their degree of rivalry and their degree of excludability:

T.1 A POSSIBLE CLASSIFICATION OF THE HIV RESPONSE AS A PUBLIC GOOD

	NON-EXCLUDABLE	WEAKLY EXCLUDABLE	STRONGLY EXCLUDABLE
Non-rival	Purely Public Goods <ul style="list-style-type: none"> • mass media • public campaigns • political advocacy • legal reform • human rights 	Public Enterprise Goods <ul style="list-style-type: none"> • research and innovation • economic benefits of treatment and prevention 	
Weakly Rival		<ul style="list-style-type: none"> • Community mobilisation • Synergies with development sectors 	Club Goods <ul style="list-style-type: none"> • vulnerable population outreach • youth programmes
Strongly Rival	Common Pool Goods		Purely Private Goods ART drugs, condoms, vaccines Services – PMTCT, circumcision, VCT



Opinions may differ about whether the various components are correctly classified in this table, but the central point is that many of them can be thought of from an economic viewpoint as primarily public goods, while others are primarily private goods. There is no pure definition that covers all of the response.

However, it is clear that the components that satisfy the attributes of private goods also satisfy the attributes of merit goods – in that they generate significant externalities in the form of economic benefits to individuals and society as a whole, and would be under-consumed in a purely private market. This applies to many of the core treatment and prevention programmes of the HIV response.

The key implication from an economic standpoint is that there is a clear justification for public-sector intervention in the response to HIV. This implies in turn that the responsibility for the response is a public one – in other words it is shared across the whole of society within affected countries.

A second question arises as to whether responsibility is also shared between countries – can the response to HIV also be classified as a “global public good”, or a “global merit good”? It is instructive to look at the work of the International Task Force on Global Public Goods.

d) The International Task Force on Global Public Goods

The International Task Force on Global Public Goods arose from discussions at the 2002 Monterrey International Conference on Financing for Development, and the 2002 Johannesburg World Summit on Sustainable Development. It began its work in 2003, sponsored initially by France

and Sweden, and later in various ways by Germany, the UK, Norway and Austria and a number of national and international organisations.

The Task Force set itself the objective to provide a concrete definition to the idea of a global public good, to identify which goods and services were included within that definition, and how they might best be financed and implemented.

The definition published in 2005 involved three main criteria that would need to be met if a public good is to be considered as being global:

1. It is broadly conceived as important to the international community
2. It cannot or will not be adequately addressed by individual countries acting alone
3. It is defined through a broad international consensus or legitimate decision process

A fourth consideration was the observation that the different global public goods were synergistic – meaning that providing one of them would make it easier to provide others.

Note that none of the criteria follows the usual economic terminology for the definition of public goods. In fact, all three of them are more reminiscent of the definition of a merit good. The argument is that there is an international consensus that certain goods are desirable or essential, and that they will be under-provided or under-consumed because of lack of resources in the countries that need them most.

The third of the criteria is particularly relevant to the arguments put forward

in this paper – it is an explicit statement that global public goods should entail a shared international responsibility for their provision.

e) Is the HIV Response a Global Public Good?

This paper has argued above that the response to HIV cannot be regarded as a purely public good, but that the parts of it that constitute private goods satisfy the criteria applying to merit goods, and justify public intervention as well. This idea is inherent in the definitions given by the International Task Force which clearly blur many of the traditional economic considerations. The distinction between public and merit goods is therefore not central to the decision to intervene.

The question of whether HIV constitutes a “global merit good” perhaps depends on the degree to which the positive externalities that result from public intervention are likely to spill across borders – is the eradication or control of the HIV epidemic a benefit to all of humanity, rather than only to the most affected countries? This issue is not prominently debated, but its resolution is implicit in the actions of the international community – perhaps constituting a “revealed preference” in economic terms.

To date, the international community has clearly treated the HIV response as a merit good, regarded as sufficiently important to commit levels of international resource that are unprecedented in the area of public health. The broad consensus has been reflected in several UN declarations, from the UN General Assembly declaration in 2001 to the 2011 Political Declaration on AIDS. Both of these reflected an international perception that

the HIV response was important, and both constitute an internationally accepted decision process as defined by the third criterion of the International Task Force.

In this respect, it would seem that quite apart from purely economic definitions, shared responsibility is already a long-standing and accepted principle within the international community, not only with regard to the HIV response, but also to many other international development priorities. While there is no sign that this perception is weakening, there is clearly a concern that the available resources cannot adequately address all of these priorities at once, and that the balance between them is no longer optimal. Perhaps the most pertinent question is not **whether** responsibility should be shared, but rather **how** can it best be shared to maximise its effectiveness? This question is explored in the following sections.

f) How should responsibility be shared?

With regard to the second criterion of the Task Force, it is also clear (and implicit in the international agreements) that many countries do not have the resources to address HIV adequately, given the extreme imbalance in the distribution of the virus across countries, the imbalance in income levels across countries, and the high cost of intervention.

Public intervention in the HIV response may come in the form of domestic investment, drawn from public (tax-based) or private funding within the most-affected countries themselves, or international investment, drawn from the high-income countries worldwide. The core question is whether it is possible to define the “right” mix of domestic and international investment in any particular country. In other words,



is there an acceptable “benchmark” or “metric” for the amount that countries might be able to invest in the future from their own resources, and that could be used as a basis for defining the responsibility of the international community to provide additional assistance?

It is clear that such a benchmark would be expected to relate to the income level of affected countries, to their capacity to provide and sustain the necessary services, and to the magnitude of the HIV epidemic that they are experiencing. Possible criteria are explored in the following section.

5. Towards defining the scope for domestic financing

a) What are the drivers of domestic public financing for HIV?

There are a number of criteria that would be expected to be related to the level of investment that a government would be able to make for HIV. These would include:

- The level of national income, measured by gross domestic product (GDP) or gross national income (GNI). This is a first approximation of the total level of resources available within a country
- The degree to which the Government is able to raise revenue from the economy through taxes, levies, domestic borrowing or other means. This might be measured by the total Government revenue, or more usually by the Government recurrent expenditure budget (which is usually larger as a result of deficit borrowing)
- The proportion of the Government budget devoted towards debt servicing – where this is large, it can significantly reduce the available recurrent budget

- The pre-existing pattern of disbursement to the different sectors. For example, if historical allocations to health have been low, then health infrastructure is likely to be poor, and this will reduce the short-run capacity to absorb rapid increases and convert them into service delivery. This would be expected to be relevant to the HIV allocation, which is typically mostly in the health sector.

A recent publication by Galárraga et al.¹ modeled per-capita domestic HIV contributions as a function of per-capita income, relative size of the health sector, and per-capita foreign debt service, and used the predicted values to represent a benchmark against which to identify imbalances between countries. The authors concluded that global domestic financing could increase substantially if countries who were below their expected level increased in order to match it.

In this paper, we propose a prior method as developed by UNAIDS that reaches a similar conclusion based on an index intended to represent a benchmark against

¹ Galárraga O, Wirtz VJ, Santa-Ana-Tellez Y, Korenromp EL (2013) Financing HIV Programming: How Much Should Low- And Middle-Income Countries and their Donors Pay? PLoS ONE 8(7): e67565. doi:10.1371/journal.pone.0067565

which to make normative projections. The method differs from that of Galárraga et al. in three important respects:

1. Total Government revenue was used in preference to GDP, as a more precise representation of the resource actually available to Government in the short run. This implies an acceptance of the current degree of economic taxation within the countries concerned, and assumes that this will not change significantly within the period of projection (usually up to the year 2020).
2. The relative size of the health sector was not considered. The essential purpose of the index proposed by UNAIDS was normative, intended to establish a benchmark for total investment in HIV that does not depend on the existing priority accorded to the health sector. It is intended that the index will capture the fact that countries with low health investment will show up as having low HIV investment as well. If the index controls for the relative size of the health sector, this will not happen – it would capture instead the degree to which HIV is prioritised within the health budget. However, where the UNAIDS index is used for the purpose of making future projections, it is important to assume relatively gradual changes from year to year, to account for the effect of health service capacity.
3. The foreign debt servicing was also not considered. This may be a potentially useful extension of the method, perhaps as a direct correction to the government expenditure budget, to give a more accurate picture of the available resources.

b) Measuring domestic priority

The Domestic Investment Priority Index (DIPI) developed by UNAIDS is based on two main assumptions:

1. A country's ability to pay for HIV from domestic public sources is dependent on the overall size of the government expenditure budget, which is a proxy for the available resources
2. A country's need to pay for HIV from domestic public sources is related to the number of people living with HIV, which is a proxy for the HIV-related disease burden

These are both expressed more clearly in per-capita terms. A country's ability-to-pay for each person living with HIV is likely to be related to the total government budget per capita (i.e. for each person living in the country). The ratio between the two suggests an index:

The DIPI index expresses the ratio:

$$\text{DIPI} = \frac{\text{PUBLIC EXPENDITURE ON HIV / AIDS}}{\text{GOVERNMENT REVENUE}}$$

Both the numerator and denominator of this expression are larger in a country with higher available income. If all of the relationships implied by the ratios (the DIPI is a ratio of ratios) are linear proportions, then the value of the DIPI would be expected to be stable with relation to changes in income (ability to pay) or disease burden (need

to pay). Under these assumptions, the value of the DIPI index should not differ between small and large countries, between poor and rich countries, or between low and high-prevalence countries. The differences in DIPI values would therefore have a normative interpretation – expressing the “level of effort” or priority accorded to HIV in a country.

Countries with a higher DIPI value are investing a greater proportion of their ability to pay on each PLHIV – therefore giving HIV more priority, as suggested by the name of the index. The actual amounts invested per PLHIV will of course be lower in lower-income countries.

There is a very wide variation of DIPI values between countries, although it is important to remember that the data quality is not always sufficient to support close interpretation of the results for individual countries. This is because expenditure data are drawn from a variety of sources – usually from National AIDS Spending Assessments (NASAs), or from annual or biannual reports intended to track progress towards the 2015 targets of the UN General Assembly Special Session on AIDS (held in 2001). It is important to note that:

- Not all countries report every year – there are significant gaps in the time series for most countries, and recent years are usually not well represented
- A few countries have never reported at all
- Categories of reporting are not always consistent between countries – for example, external funds are sometimes counted as domestic (especially where

there is pooled funding from external donors)

- For this reason, the data presented below have been subject to an analysis designed to provide the most rational possible interpolations in order to produce a consistent basis for comparison of the global total between years (as presented in Figure 3 above), and to make a “best guess” for non-reporting countries.

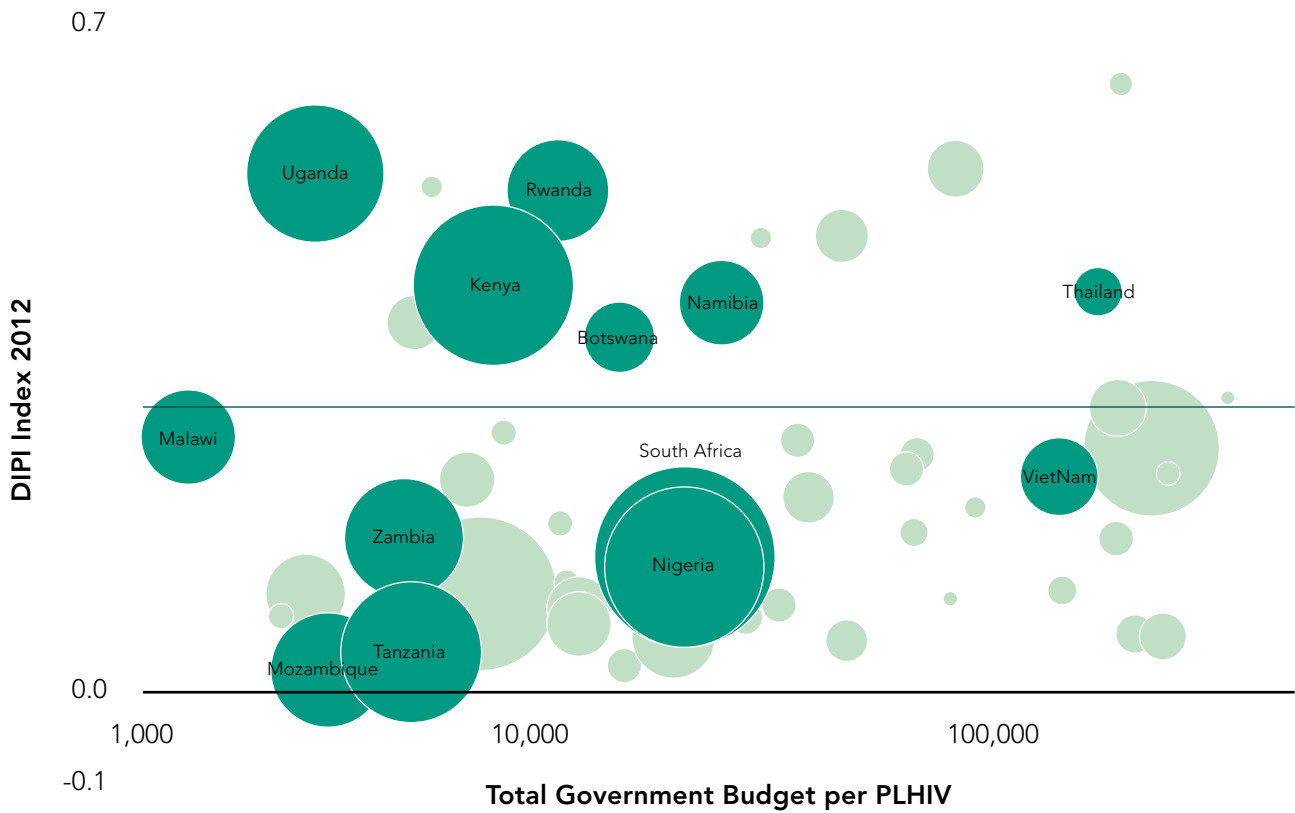
For these reasons, there needs to be considerable care in interpreting country-specific information. These are presented here as a first step in what should be a more detailed investigation at country level.

Figure 6 below shows indicative values of the DIPI index, using UNAIDS prevalence and expenditure data (as described above) from 2012. The vertical axis represents the value of the DIPI index, the horizontal axis arranges the countries according to a crude measure of ability to pay – the total resources available (Government budget) per person living with HIV (PLHIV), while the size of the bubble represents the level of international funding in each country during 2012. The horizontal red line is the median value of the DIPI across these countries, a selection of which are identified for purposes of illustration, subject to the caveat on data quality.

Note that there is no obvious correlation (as expected) between national ability to pay (the horizontal axis) and the value of the DIPI – some poorly-resourced countries have high DIPI values, others low. This is a first-level indication that the DIPI index may be providing a genuine measure of national priority, rather than of national resource availability.

F.6

COMPARING GOVERNMENT COMMITMENT USING THE DIPI INDEX



One possible conclusion might be that the low-income countries that are above the DIPI median cannot reasonably be asked to pay more from domestic sources, while those below the DIPI median may have potential to do so. This would have important implications for the nature of the dialogue that would be appropriate between external donors and the Governments of recipient countries.

Note also that approximately 70% international funding is currently provided to countries that are below the DIPI median – i.e. they accord less than average priority to HIV from their own budgets. This is suggestive that there may have been a degree of

substitution or fungibility in national allocations to different sectors – based on a perception that donors will continue to fund HIV, so that national funds can be allocated elsewhere.

The enormous variation between countries in the values of the DIPI index suggest that there is significant potential for increased domestic investment in some of them, but not others, and that the index values might be used as a first-level indicator in negotiating future reallocations of international funding. This provides a possible basis, explored in the following section, for assessing the degree to which domestic funding might be able to grow in coming years, and in which countries.

c) Potential for future growth in domestic investments

The DIPI analysis (in agreement with the analysis of Galarrága et al.) suggests a method for projecting the potential for future growth. As a starting point, we would expect domestic expenditure to increase in line with economic growth, which would translate into growth of available resources and Government budgets, all else being equal.

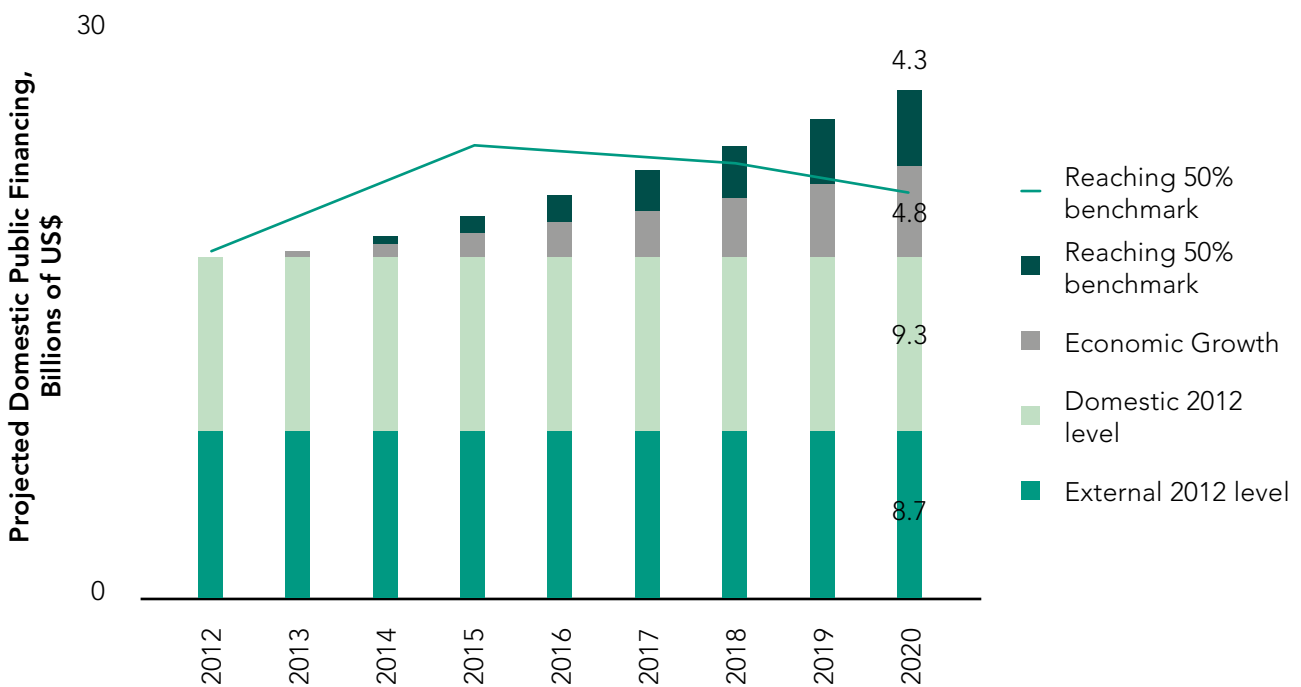
As a second step, we might establish a normative criterion based upon the DIPI index, for example by picking a value representing an indicative norm. This approach asks the question – what would global financing look like if countries below a normative DIPI level were to increase toward that level by a target year, while countries above that level remain as they

are? Thus, some countries might increase their HIV investments only on the basis of economic growth, while others might have additional potential to reallocate in favor of HIV from other budget lines.

This approach has been used for the projections presented in Figure 7 below, which was also the underlying assumption used in the calculations for the replenishment request to GFATM for 2014-16. This used the DIPI median as an indicative norm (for countries below that level) to be reached by the year 2020. The chart distinguishes the potential growth from 2012 resulting from economic growth alone from the additional growth that might result from reallocation in countries below the DIPI median. The line on the chart represents the total estimate of global resource need produced by UNAIDS for the 2010 Investment Framework:

F.7

POTENTIAL RESOURCES 2020 AND THE INVESTMENT FRAMEWORK



The chart shows the potential increases in comparison with the baseline value of \$8.6 billion in 2011 (in blue – this includes an estimate of about \$1 billion from out of pocket spending). Economic growth over the 8-year period would be expected to add a further \$1.7 billion, or 20% to domestic investment. Reallocation by the countries below the DIPI median would add a further \$1.6 billion, or 19%, which is a relatively modest reallocation over the period. A more aggressive criterion (such as reaching the 75 percentile rather than the median) would yield somewhat more. In addition, since the chart presents only the total, it masks the significant implication for reallocation between the countries.

It can be seen that the current level of international investment (which has been added as the next layer in the chart) falls short of the resource needs estimated for the Investment Framework, implying an global unfunded gap of about \$5 billion by the year 2015, which falls steadily thereafter and might be met altogether by the year 2018.

This analysis therefore suggests that it is unrealistic to meet the current global targets for HIV financing for 2015 purely through increases in domestic investment. Although it would

seem that increases of about 4% per annum would be easily sustainable through economic growth and reprioritisation in low and middle-income countries, the resource need estimates imply a remaining need for further increases from the international community in the short term. There is however a realistic prospect that the global need for international investment may start to decline in future.

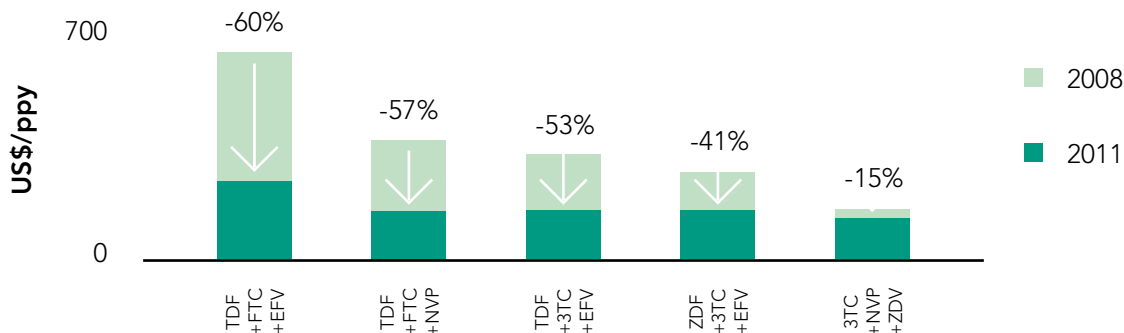
One question that arises naturally is whether there is further potential to reduce the resource needs through improvements in efficiency and effectiveness of the response. This potential is briefly discussed in the next section.

d) Increasing value for money

The Investment Framework estimates have already made strong assumptions about the potential for reduction in unit costs, particularly for treatment. Commodity prices have indeed fallen significantly in recent years (see Figure 8 below), in addition to which an increasing proportion of people on treatment (now 90%) are using lower-cost generic drugs. Further reductions might be expected in the future as a result of economies of scale and scope (through improved integration of services).

F.8

POTENTIAL RESOURCES 2020 AND THE INVESTMENT FRAMEWORK - MEDIAN PRICE OF SELECTED FIRST-LINE REGIMENS IN LOW-INCOME COUNTRIES



Source: Global Price Reporting Mechanism, WHO 2012



Set against this however is the consideration that costs may also rise in future with widespread adoption of new technologies and targets – e.g. treatment as prevention and new treatment guidelines.

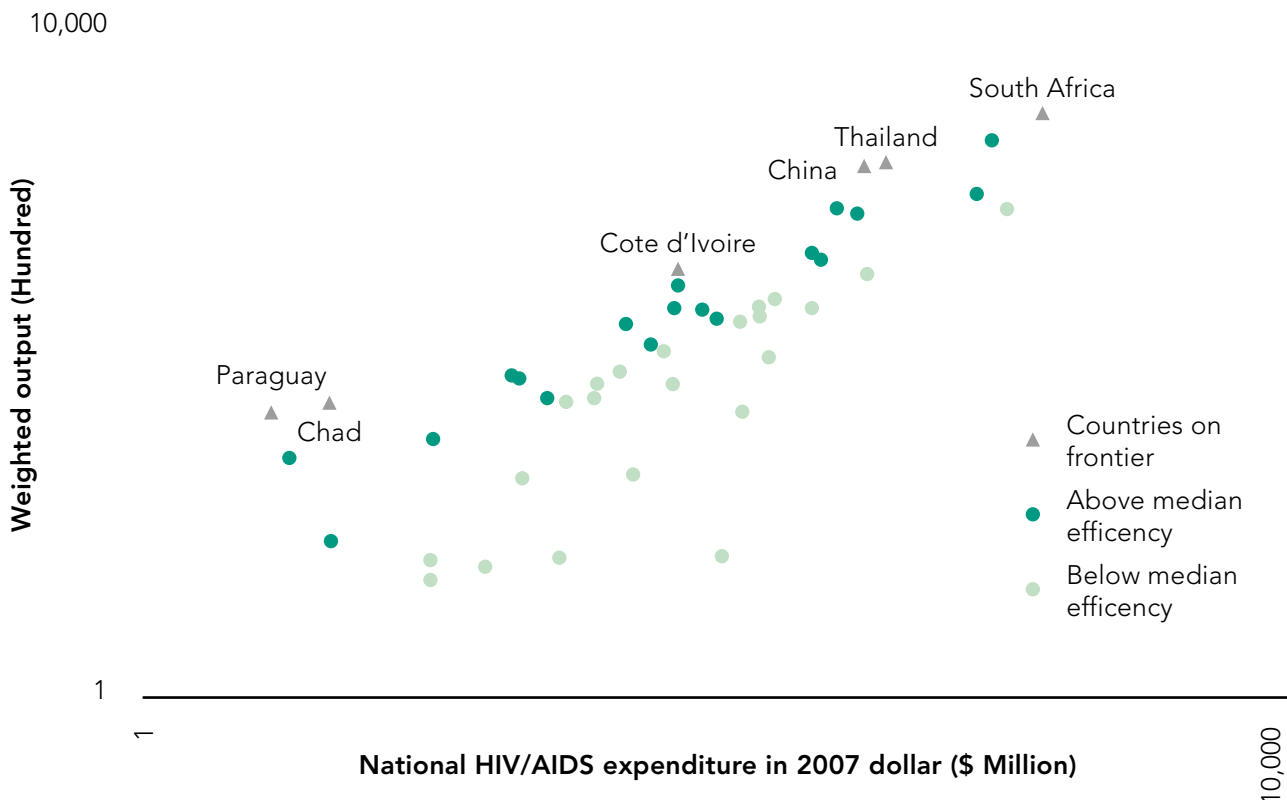
A recent study carried out by Wu Zeng et al (2009)² used data envelopment analysis (DEA) to evaluate the technical efficiency of national HIV/AIDS programmes in low and middle income countries. This can be seen as a landmark study because its results indicate at country level the extent to which efficiency gains can be made. This information is, obviously, of crucial importance to any approach to sustainable financing for HIV.

The study determines technical efficiency levels for the combined outcomes of different HIV programmes in 68 countries between 2002 and 2007. The outcomes used were: number of people receiving voluntary counseling and testing (VCT), the number of HIV+ pregnant women receiving AIDS treatment for prevention of mother-to-child transmission (PMTCT), and the number of patients receiving antiretroviral treatment (ART).

A notable outcome of the study was the ability to place countries on a production possibility boundary chart, which shows which countries are near or on the boundary (more efficient), and which have the potential to reach the boundary. This is illustrated in Figure 9 below.

F.9

HIV AND AIDS SERVICES PRODUCTION FRONTIER



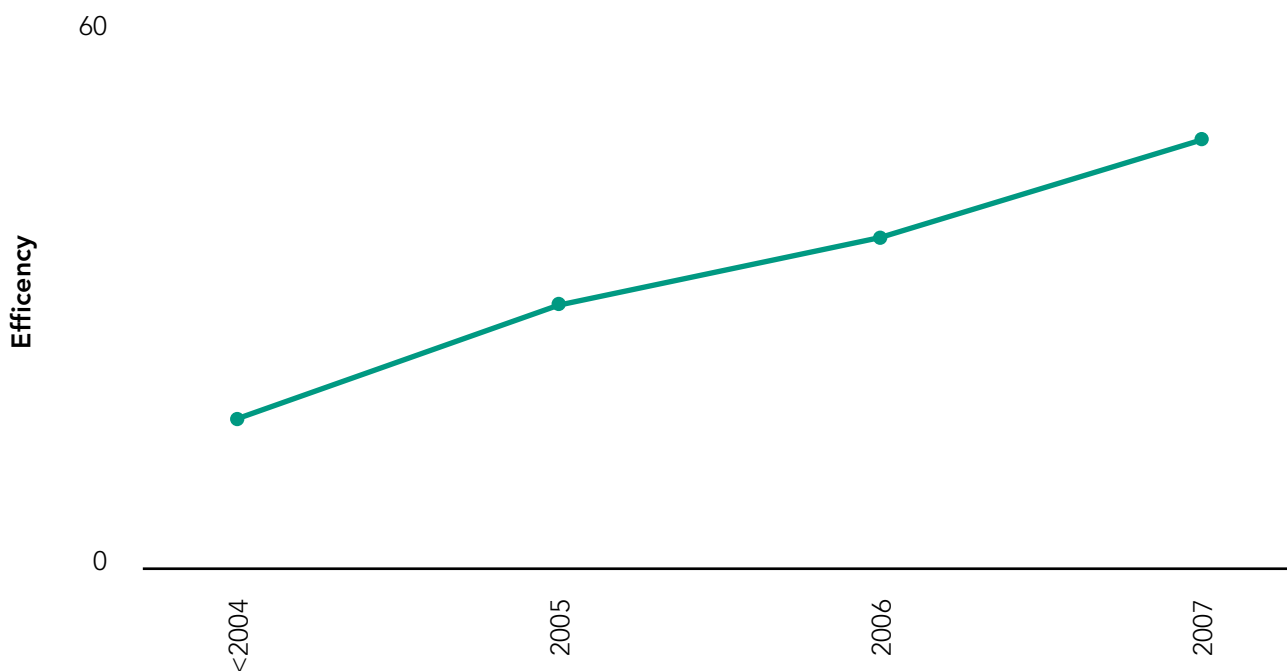
² Zeng W, Shepard DS, Chilingerian J, Avila C.. "How much could we gain from improved efficiency? An examination of performance of national HIV/AIDS programs and its determinants in developing countries." BMC Health Services Research 12. (2012): 74.

A second notable result from the analysis was the observation that efficiency of AIDS responses increases significantly over

time, from 13.3% before 2004 (including 2004) to 47.7% in 2007. This is shown in Figure 10 below.

F.10

CHANGE IN EFFICIENCY OF NATIONAL HIV/AIDS PROGRAMS OVER TIME (2002-2007)



The authors also investigated the drivers of increased efficiency of HIV programmes, and concluded that the most important explanatory variables are:

Income measured by GNI per capita – efficiency increases with increasing income up to a certain point, then decrease again for higher income levels

An combination of 'control of corruption' and 'rule of law' – suggesting that the more the rule of law is respected and the more public power is exercised for the benefit of the public good, the more efficiently HIV programmes are implemented

Voice and accountability – suggesting that higher levels of beneficiary group participation in decision making lead to better value for money in the production of VCT, PMTCT and ART services. This finding is in line with best practice guidance from UNAIDS

Although Zeng's study has well-recognised limitations – for example it only accounts for three of the components of the HIV response and it does not consider the impact of allocative efficiency improvements (which would be significant), it does provide important insights as to the probable scale and pace of future efficiency gains, and also an idea of which countries have the greatest

potential. Although these improvements are unlikely to be realised before the 2015 target year, the study provides strong

encouragement that future gains have the potential to outweigh the probable scale of financing increases.

6. Conclusions

1. This paper has argued that there is an implicit international consensus that the response to HIV is a global merit good that requires a collective international response. This in turn implies that there is an acceptance of shared responsibility – what remains is to quantify the terms of that responsibility on the part of domestic and international investments.
 - This calls for continued and sustained commitment by traditional donors, and investigation of further options – for example new donors, innovative sources, bridging loans and continued efficiency gains
2. Domestic expenditure on HIV can continue to increase as economies grow and countries reallocate in line with ability to pay and disease burden
 - But domestic financing is limited by economic capacity, especially in low-income countries
 - In addition, some countries are already allocating as much as can reasonably be expected
3. There are remaining unfunded needs beyond the domestic ability to pay in low and middle-income countries
4. It is possible to devise acceptable benchmarks or metrics that will help to define the most appropriate mix within countries of domestic and international financing, and will help to ensure that international financing is distributed to best effect
5. There are encouraging signs that the remaining funding gaps can be met by future improvements in efficiency and effectiveness, although the short-term targets may not be met.
6. If the 2015 coverage targets are to be met, it follows that there will need to be short-term increases in the level of international funding, probably by between \$5-6 billion per annum.

7. Appendix – Terms of Reference

This paper has been produced on behalf of UNAIDS, on the basis of terms of reference that requested the following:

- Describe global principles of fair share including how government revenue and burden of disease link to projected ability to pay and analysis of criteria for efficient resource allocation between countries etc.
- Paper of 20-25 pages on global principles of shared responsibility, including brief technical annexes. The paper

should include a description of guiding principles of shared responsibility in the AIDS response; criteria for assessing/calculating countries fair share based in their ability to pay, burden of disease and economic growth; criteria for assessing

/indicating to donors how to allocate their international assistance to countries based on need and ensuring equity; suggested methodologies/tools to make the necessary measurement and projections.



BENCHMARKS FOR DOMESTIC CONTRIBUTION TO AIDS FINANCING

Produced by: Dr Stephen Resch as part of the policy brief for the SFTWG



The purpose of this policy brief is to provide policymakers guidance for evaluating

domestic contribution to the AIDS response in high-burden countries.

1. Introduction

The AIDS response in the highest burden countries has been primarily financed by international donors. There are ten countries with over one million persons living with HIV (Table 1). These countries have 61% of the world's 35 million cases. With the exception of India, they are all in Sub-Saharan Africa. These ten countries are also among the ones with the largest number of annual new infections. Domestic sources provide the majority of AIDS financing in only 2—South Africa and

India. Excluding these two countries, the remaining countries together contribute only 16% of the funding for their current AIDS response. Moreover, the unmet need for HIV services remain very large in all of these settings. Indeed, not quite 40% of the 21 million PLHIV in these countries are currently on ART. The coverage of other key strategic HIV interventions is less well documented, but what evidence there is suggest prevention activities are less scaled up than ART in most settings.

TOP TEN COUNTRIES BY # PLHIV	INCOME LEVEL	EPIDEMIC TYPE	PLHIV (MILLIONS)	FRACTION OF PLHIV CURRENTLY ON ART	FRACTION OF AIDS FUNDING THAT IS FROM DOMESTIC PUBLIC SOURCES
South Africa	UMI	Hyper	6.3	42%	83%
Nigeria	LMI	General	3.2	20%	21%
In	LMI	Concentrated	2.1	36%	88%
Kenya	LI	General	1.6	41%	18%
Mozambique	LI	Hyper	1.6	32%	5%
Uganda	LI	General	1.6	38%	13%
Tanzania	LI	General	1.4	37%	40%
Zimbabwe	LI	Hyper	1.4	48%	14%
Zambia	LMI	Hyper	1.1	52%	6%
Malawi	LI	Hyper	1.0	46%	13%

Source: UNAIDS aidsinfoonline.org. Alternate data on domestic spending from their recent NHA (<http://apps.who.int/nha/database/DocumentationCentre/GetFile/51084611/en>) were substituted for Malawi. For India, a budgetary split found in a World Bank Project Appraisal Document for India's National AIDS Control Project (<http://www.gtai.de/GTAI/Content/DE/Trade/Fachdaten/PRO/2013/05/Anlagen/PRO201305148008.pdf>) was used as no other information was available.

High-income countries of the world certainly have sufficient resources to pay the cost of even the most ambitious AIDS response plans, but many donors are signaling a new era, in which they will play a smaller role. In fact, the two largest international funders of AIDS programs, the United States' President's Emergency Plan for AIDS Relief (PEPFAR) and the multilateral Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), which together account for 78% of international

financing for AIDS, are both shifting their policies to enable greater country ownership and are simultaneously establishing clearer expectations of domestic financial contribution. Global Fund's recent policy reforms regarding counterpart financing are designed to encourage countries to play a larger role in financing their AIDS programs as their economies grow. 16 Similarly, PEPFAR's multi-year Partnership Framework (PF) agreements and Partnership

Framework Implementation Plans (PFIP) promote a transition of programmatic ownership to partner governments, including greater responsibility for financial support of programs.¹⁷ At the United Nations General Assembly in 2011, UNAIDS called for “shared responsibility to meet investment needs” through increased long-term domestic and international funding, and proposed that recipient governments be held more accountable for increasing domestic investment.¹⁵ Subsequently, the African Union embraced a new paradigm of “shared responsibility and global solidarity” that emphasizes a greater role for domestic financing of AIDS programs and domestic leadership in defining AIDS priorities and directing resources.¹³ AIDS-affected countries have signaled an interest in playing a greater role in directing and financing their AIDS programs. Many have more than doubled their domestic financing commitments to AIDS from 2006 to 2011, and for the first time in 2011, total domestic resources for AIDS in LMICs exceeded donor financing.¹⁸

In part, the paradigm shift toward “shared responsibility and global solidarity” may be driven by the recognition that the AIDS epidemic is not a classic “emergency”, in the sense of a natural disaster, or even recent H1N1 or Ebola outbreak, which demands a high level of resources to be deployed rapidly, for a relatively short period of time [Over, chapter on Obama’s PEPFAR¹]. With today’s treatment regimens, initiated sufficiently early in the disease course, most PLHIV can experience life expectancies approaching those of similar non-infected individuals [CITE¹¹]. Thus, HIV treatment is a long-term entitlement, and each

person on ART represents a quasi-liability for governments and donors (haacker¹¹). Given that current HIV programs are operating at a scale less than half of what is required to meet global strategic goals, donors are apparently apprehensive about maintaining an approach featuring donor-financed scale-up of vertical HIV treatment programs.

At least in the case of resources supporting treatment, reputational risk makes it unlikely that international donors will withdraw support for current patients. Nevertheless, there is not an equivalent reputational risk associated with defunding prevention activities or choosing not to finance additional scale up of treatment. If global goals are to be reached, it is evident that a large portion of the additional resources required will need to come from sources other than the donors who fueled the response over the past 15 years.

Other development trends put further pressure on the status quo financing and organization of the AIDS response. The featured status of HIV in the Millennium Development Goals (MDGs) will not carry through to the Sustainable Development Goals (SDGs). Indeed, all of health is subsumed into just 1 of the 17 draft SDGs. The post-2015 agenda and the push for universal health coverage (UHC) feature a more holistic systems approach to health care financing and delivery. The AIDS response of the last 15 years, driven by international donors and often featuring donor-operated programs, sharply contrasts with this new vision. As AIDS programs have matured, and local technical capacity and infrastructure have expanded, increasing country ownership and some integration into

¹ Over M. 2010. Prevention Failure: The Ballooning Entitlement Burden of U.S. Global AIDS Treatment Spending and What to Do About It. In *The Socioeconomic Dimensions of HIV/AIDS in Africa*. Ed. Sahn D.

¹¹ Nakagawa F et al. Projected life expectancy of people with HIV according to timing of diagnosis. *AIDS*, 28 January 2012. 26(3):335-43

¹¹ Haacker, J., Financing HIV/AIDS Programs in Sub-Saharan Africa. *Health Affairs*, 2009.

health systems has occurred—particularly in upper-middle income countries. Still, in most countries with high-burden, we are far from a situation where HIV is, or could safely be, fully integrated into the health system. Nonetheless, the predominant trend toward integrated health systems may limit receptivity to disease-specific appeals for greater resources.

This new emphasis on a “shared responsibility” that features a larger contribution from domestic sources in AIDS-affected countries requires greater examination of (1) how much of the resource requirements can be met with domestic financing without causing undue harm to other priorities and (2) whether resource gaps could be eliminated by such greater

domestic financing, if international aid was spent where it is truly needed most.

The growing focus on domestic financial support creates a demand for new approaches and metrics for evaluating the intensity and adequacy of domestic effort, and assessing the potential for additional domestic financing. To this end, UNAIDS and others have developed “peer comparison” approaches that compare the relative level of domestic AIDS financing in different countries while controlling for country-specific factors like the size of the epidemic, and the size of the resource envelope from which AIDS funding would be drawn. Others have focused on creating peer-independent benchmarks to serve a practical reference points, relying on norms such as the Abuja target for health spending.

2. Peer comparison

UNAIDS developed the Domestic Investment Priority Index (DIPI) in 2010 to measure countries’ domestic financing effort for AIDS, relative to their income and epidemic size.¹⁹ The DIPI index is useful for ranking countries and identifying relatively low performers. The measure has been refined by UNAIDS since its introduction. One version of the indicator, which we will refer to as the UNAIDS Prevalence-based DIPI (p-DIPI), measures domestic AIDS spending as a share of total government revenue, adjusting for HIV prevalence. UNAIDS first used the p-DIPI to compare countries’ domestic financing effort for AIDS in its 2010 Report [UNAIDS, *UNAIDS Global Report Chapter 6: HIV Investments*. UNAIDS: Geneva, Switzerland, 2010].

The logic of the p-DIPI is that two countries with the same priority for AIDS should spend the same fraction of government revenue on AIDS per unit of HIV prevalence. If

hypothetical Country A and Country B both have 10% HIV prevalence, then, according to the p-DIPI, they would have the same “priority” for AIDS if they each were to allocate the same share of their government revenue to AIDS programs. If Country A increased the share of GDP collected as government revenue (e.g. Country A2 in Table 2), it would have to increase its AIDS spending by a similar proportion to maintain the same “priority” for AIDS.

When comparing the DIPI scores of 2 countries with different income level, it is important to note that the DIPI does not account for differences in input prices. For example, in Table 2, Country B is identical to Country A, except that Country B has GDP per capita five times higher. For Country B to have the same “priority” for AIDS as Country A, it will need to spend five times more. Indeed, the resources required to meet a common set of strategic aims is twice as high

in Country B compared to Country A due to higher price of inputs. Richer countries are therefore expected to spend more money per PLHIV, and when price levels rise more slowly than income (as has been shown in cross country studies of HIV treatment cost [Menzies et al]), the p-DIPI's construction demands that richer countries cover a larger

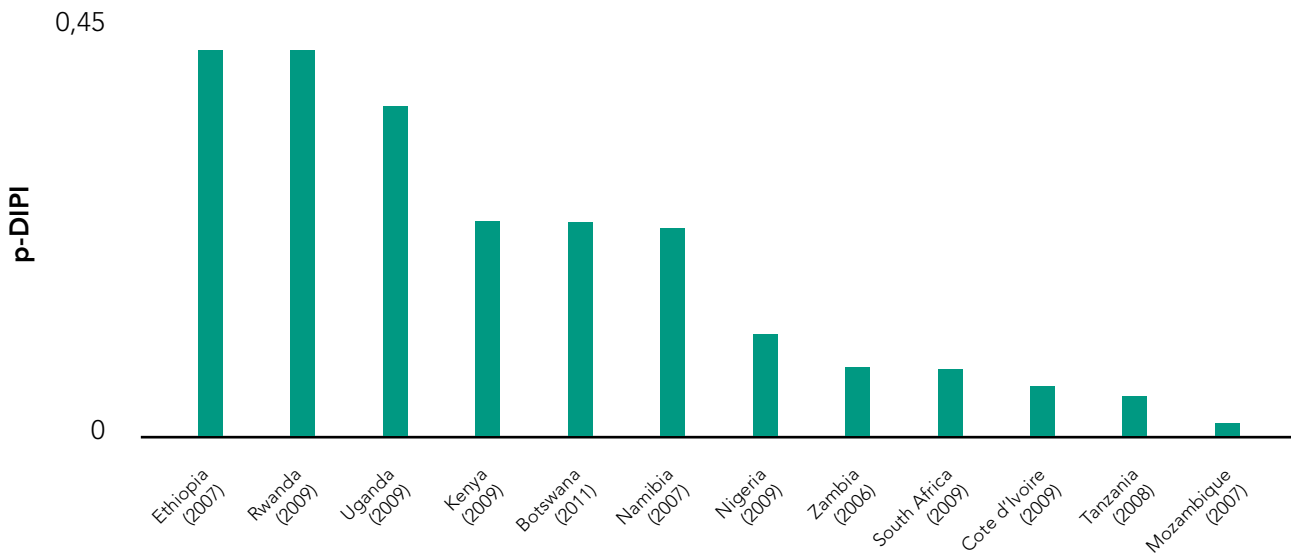
share of the total resource requirements in order to be considered as having the same priority level. In our example, for Country B (\$5000 per capita GDP) to have the same p-DIPI score as Country A (\$1000 per capita GDP), it will have to cover 25% of the total resource requirements as opposed to just 10% in Country A.

T.2 ILLUSTRATION OF THE P-DIPI MEASURE

INDICATOR	COUNTRY A	COUNTRY B	COUNTRY A2	COUNTRY B2	COUNTRY B3	COUNTRY B4	COUNTRY B5
GDPpc	\$1,000	B	\$1,000	\$5,000	\$5,000	\$5,000	\$5,000
GGR/GDP	0.2	\$5,000	0.3	0.2	0.2	0.2	0.2
Population	10000	0.2	10000	10000	10000	10000	10000
PLHIV	1000	10000	1000	1000	250	250	250
Prevalence	10%	1000	10%	10%	2.5%	0.5%	2.5%
RNE/PLHIV	\$1,000	10%	\$1,000	\$2,000	\$2,000	\$2,000	\$2,000
GGR	\$2.0 M	\$2,000	\$30.0 M	\$10.0 M	\$10.0 M	\$10.0 M	\$10.0 M
p-DIPI	0.5	\$10.0 M	0.5	2.0	2.0	10.0	10.0
GAE	\$100,000	0.5	\$150,000	\$2.0 M	\$500,000	\$500,000	\$2.5 M
GAEpc	\$10	\$500,000	\$15	\$200	\$50	\$50	\$250
GAE/PLHIV	\$100	\$50	\$150	\$2,000	\$2,000	\$2,000	\$10,000
GAE/RNE	10%	\$500	15%	100%	100%	100%	500%
GAE/GDP	1.0%	25%	1.5%	4.0%	1.0%	1.0%	5.0%

GDPpc = Gross Domestic Product per capita, GGR = General Government Revenue, PLHIV = People Living with HIV, p-DIPI = UNAIDS' Prevalence-based Domestic Investment Priority Index = (GAE/GGR)*(1/Prevalence), GAE = Government AIDS Expenditure, RNE = Resource Needs Estimate to achieve strategic aims.

DOMESTIC INVESTMENT PRIORITY INDEX RANKINGS FOR PEPFAR FOCUS COUNTRIES



COUNTRY	DATA YEAR	HIV PREV.	GDPPC	GGR/GDP	GAE	P-DIPI
Botswana	2011	23%	\$7551	36%	\$295M	0.23
Cote d'Ivoire	2009	4%	\$1052	19%	\$9M	0.06
Ethiopia	2007	2%	\$249	17%	\$28M	0.42
Kenya	2009	6%	\$768	23%	\$98M	0.24
Mozambique	2007	11%	\$366	25%	\$5M	0.02
Namibia	2007	16%	\$4345	30%	\$96m	0.23
Nigeria	2009	4%	\$1124	18%	\$125m	0.11
Rwanda	2009	3%	\$536	24%	\$17m	0.42
South Africa	2009	19%	\$5683	28%	\$1153m	0.08
Tanzania	2008	6%	\$508	22%	\$12m	0.04
Uganda	2009	7%	\$511	15%	\$60m	0.36
Zambia	2006	14%	\$908	44%	\$48m	0.08

Country B would have to increase its DIPI to 2-- spending 2% of GGR for every 1 percentage point of HIV prevalence-- in order to fully meet the resource requirements of the AIDS response without external assistance (Country

B2 in Table 2). Such an effort would consume 20% of all government revenue and 4% of GDP. However, if Country B's prevalence was only 1/4th as large, it could fully meet the resource requirements of the AIDS response

with a much more feasible 5% of government revenue and 1% of GDP (Country B3 in Table 2). Yet, the p-DIPI would rank Country B2 and Country B3's domestic effort as equivalent. Likewise, if 2 similar countries differ in HIV prevalence, and both fully meet 100% of the resource needs required for a common set of AIDS response goals, the low prevalence country will have a higher p-DIPI score (e.g. Country B4 vs Country B3 in Table 2). This is because the p-DIPI does not consider resource need. Indeed, for Country B3, to have the same DIPI as Country B4, it would have spend 5 times more than the total needed to meet strategic goals (e.g. Country B5 in Table 1).

As Figure 1 shows, evaluating AIDS spending with the p-DIPI reveals that for every 1% of HIV prevalence, the original PEPFAR countries spend between one twentieth and one half of a percent of government revenue on AIDS. Countries such as Rwanda, Uganda, and Ethiopia rank highest on the DIPI, while Mozambique, Tanzania, and Cote d'Ivoire, the three countries where domestic AIDS expenditure makes up the smallest share of total AIDS expenditure, rank lowest. High rankings for Rwanda, Uganda, and Ethiopia are caused by a combination of higher domestic AIDS expenditure levels, smaller epidemics, and low revenues. For South Africa to increase its p-DIPI to meet the level of the Ethiopia and Rwanda it would need to have spend \$6.3 billion on AIDS in 2009, which significantly exceeds the resources estimated to be required to achieve the ambitious UNAIDS' 'Fast Track' goals.

While there is no normative standard p-DIPI score, one can assess individual countries

relative to the average or median for a group of their peers. Given the limitations discussed and illustrated above, it may be prudent to limit p-DIPI comparisons to peer countries in the same income tier and with similar HIV prevalence. With this caveat, the p-DIPI can be adapted for forward-looking analysis. Resch et al. [R4D report for PEPFAR] calculated the expected convergence of DIPI scores for 12 countries that met objective spending benchmarks over time. Likewise, the improvement in DIPI score corresponding to a particular AIDS spending plan can be calculated. For example, in countries with relatively weaker domestic effort, a policymaker could calculate the AIDS spending increase required to reach the median DIPI score achieved by peer countries. Of course, peer comparison based approaches are only useful for individual country work if up to date analysis of a set of peers is available. A strength of the p-DIPI is its simplicity and relatively modest data requirement, although the routine production of accurate, comparable, up-to-date estimates of government spending on AIDS is still a challenge.

Galárraga et al.²⁰ estimated expected government AIDS expenditure for countries using a median regression model with gross national income (GNI) per capita, health spending as a proportion of GNI, and debt service per capita as predictors. Like the p-DIPI, this is also a peer comparison approach, because the expected expenditure is a function of the sample of countries that supplied data for the statistical modeling. As with the p-DIPI, in a situation where most countries may have historically been underspending on AIDS, the model will set rather low benchmarks to guide future efforts.

3. Peer-independent benchmarks

Policymakers may prefer a more objective standard that does not depend on what countries have done. There is no broadly accepted normative standard for what level

of domestic AIDS spending represents a fair, affordable, or reasonable effort. But some reference points for sustainable AIDS spending have been suggested.

Simplest benchmark: AIDS spending a share of GDP

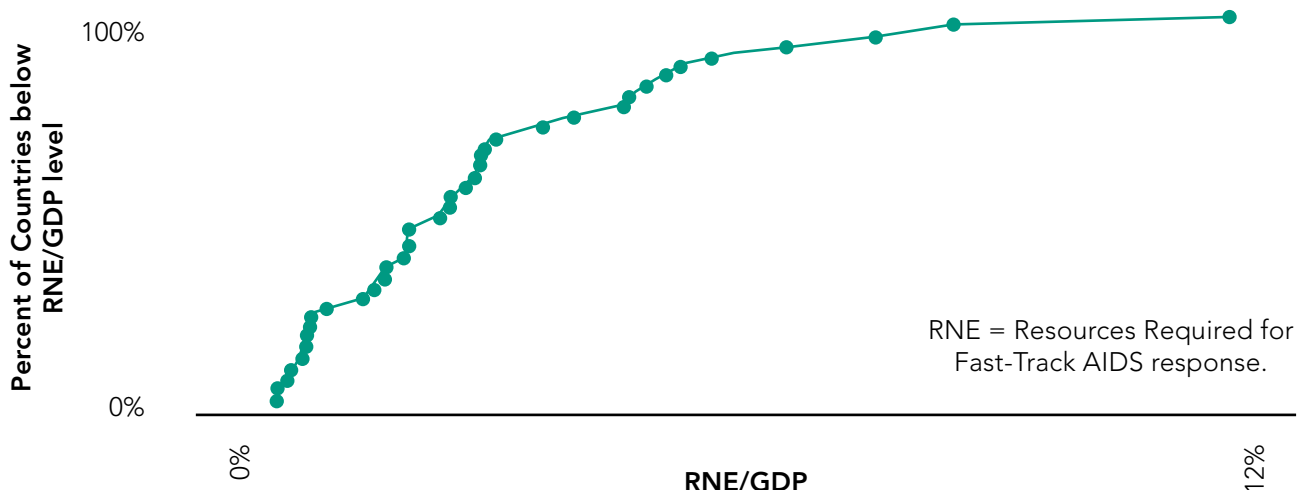
AIDS spending as a share of GDP is a useful metric since GDP is broadly the amount of resources a society has available to spend. Much of the writing about health financing expresses resource need as a share of GDP and suggests thresholds for domestic contribution. Williams and Gouws^{iv} 'affordability index' for universal ART, where they consider affordable a cost of < 1% GDP. Lule and Haacker^v also express HIV program cost as a share of GDP when discussing financial sustainability, although their analysis is more sophisticated, in that it considers the downstream reduction in treatment liability associated with investment in effective prevention activities. Program cost as a share of GDP has also been articulated in

the area of vaccination (Saxenian et alii^{vi}) and social protection (ODI^{vii}).

Were the Williams and Gouws affordability benchmark of 1% GDP accepted as a reference point, countries could aspire to contribute up to this level, and advocate for international assistance to cover program costs that remain. Most low- and middle-income countries have AIDS epidemics for which a full response (e.g. 90-90-90 Fast Track) only requires resources representing a small fraction of GDP (e.g. less than 0.5% GDP). This is true for all countries with concentrated epidemics. Only 29 countries have average annual RNE exceeding 1% of GDP, and all of them have generalized epidemics or are hyper endemic. Most are in sub-Saharan Africa, 19 are low-income, 7 are lower-middle-income, and 3 are upper-middle income. Ten countries have resource needs (RNE) that exceed 4% of GDP (Figure 2).

F.2

SHARE OF 39 GENERALIZED AND HYPERENDEMIC COUNTRIES WITH RESOURCE NEEDS EXCEEDING PARTICULAR SHARES OF GDP, CUMULATIVE OVER 2015-2030.



Source: adapted from Piot Lancet Commission on AIDS 2015.

^{iv} Williams B and Gouws

^v Lule and Haacker

^{vi} Saxenian et al.

^{vii} ODI. Fiscal Space for Strengthened Social Protection

While AIDS spending relative to GDP is a useful guidepost, it can be useful to focus more directly on the government's budget or, more specifically, the health sector budget, since this is the main subset of GDP policymakers draw from to spend on AIDS.

Size of Government

Countries with the same GDP can have very different fiscal space for AIDS and other priorities, because of variation in the size of government. Vassall et al. 2013^{viii} note that tax receipts as a share of GDP vary from about 5% to 34% in sub-Saharan African countries. General government expenditure (GGE), from which the health sector budget is drawn, ranges from about 15% to almost 40% of GDP in the 12 original PEPFAR focus countries.

Abuja Target

Most government AIDS expenditure runs through the health sector [Insert stat to support]. Countries with strong domestic financial commitment to health will have more fiscal space within their health budget to support AIDS programs. In 2001, African Union member states pledged, as part of the Abuja Declaration, to increase the share of their governments' budgets spent on health to 15%²⁵, in part to strengthen health systems in response to AIDS. The pledge has been reaffirmed and remains a well-recognized development target.^{5,26}

DALY Share

Within the health sector, one indicator of priority for AIDS is the ratio of AIDS' share of domestic health expenditure to

AIDS' share of the total disease burden measured in DALYs. While AIDS' share of the health budget might be expected to be positively and consistently correlated to AIDS' DALY share across a similar set of countries, allocating health resources solely in proportion to disease burden will not necessarily maximize health impact because it does not consider the cost-effectiveness of available interventions targeting AIDS and other health priorities.²⁷ To be conservative, we assumed the benchmark ratio of AIDS' share of domestic government health expenditure (GAE/GHE) to AIDS' share of disease burden (AIDS DALY/Total DALY) is 0.5. In other words, a country where 10% of the total disease burden is due to AIDS would be expected to spend at least 5% of its health budget on AIDS programs. This benchmark value is consistent with empirical data suggesting this level of spending is achievable in LMICs with moderate to severe AIDS epidemics. For example, of the 30 countries reporting to UNAIDS since 2008 that have AIDS burden greater than 3500 AIDS DALYs per 100,000 population (to match the 12 countries in our sample), 10 had ratios above 0.5, including seven low-income countries and five where AIDS accounted for more than 10% of total DALY burden.

Joint application of the Abuja target and DALY share benchmark

Table 3 shows current domestic investment in the AIDS response in the 12 original PEPFAR focus countries. Most of these countries are spending less than the Abuja target of 15% of government budget on health—only Rwanda and Zambia exceed it. Five countries do not even spend 10% of government budget on health. Increases in health budget, with proportional increases

^{viii} Vassall A Remme M Watts C Hallett T, et al. Financing Essential Health Services: A new economic agenda. PLoS Medicine 2013;10(12):e1001567

in AIDS spending, could help close the AIDS resource gap. The table also reveals that these countries show a wide variation in the size of their domestic financing for AIDS relative to AIDS' share of the countries' disease burden (measured in DALYs).

Three countries spend a proportion of their health budget on AIDS that is larger than AIDS share of the total disease burden, but other countries' allocations for AIDS are lower than a quarter of AIDS' share of disease burden.

T.3 CURRENT AIDS SPENDING IN SELECTED SUB-SAHARAN AFRICAN COUNTRIES

COUNTRY	HEALTH SHARE OF GOVT SPEND (GHE/GGE), 2012A	AIDS SHARE OF TOTAL DISEASE BURDEN, 2005B	(GAE/GHE) : (AIDS DALY/ TOTAL DALY)	IMPLIED GAE FOR 2013 (TARGET)	IMPLIED GAE/GDP	ACTUAL SPENDING MEETS TARGET
Low Income						
Ethiopia	11%	6%	1.16	\$32M	0.08%	Yes
Kenya	6%	22%	0.67	\$258m	0.51%	No
Mozambique	9%	18%	0.21	\$69m	0.49%	No
Rwanda	22%	12%	0.35	\$18m	0.25%	Yes
Tanzania	10%	20%	0.06	\$115m	0.41%	No
Uganda	10%	14%	1.05	\$40m	0.19%	Yes
Lower-Middle income						
Côte d'Ivoire	8%	13%	0.23	\$65m	0.23%	No
Igeria	7%	7%	0.37	\$589m	0.13%	No
Zambia	16%	28%	0.13	\$157m	0.63%	No
Upper-Middle income						
Botswana	8%	44%	1.4	\$158m	1.09%	Yes
Namibia	14%	39%	0.67	\$141m	1.08%	Yes
South Africa	13%	46%	0.18	\$4,353m	1.14%	No

^a World Health Organization National Health Accounts (WHO NHA), ^b IHME Global Burden of Disease Study 2010

The implied level of AIDS spending in 2013 for the 12 original PEPFAR countries is shown in Table 3. Only for the three UMI countries does the target level of spending reach 1% GDP. For most low and low-middle income countries, the target level of spending does not exceed ½% of GDP. Based on the most recently available AIDS spending data, five of the 12 countries may be meeting the target domestic AIDS spending implied by the benchmarks.

These benchmarks have several limitations. First, while the notion of allocating a share of the health budget to AIDS that is proportional to its share of disease burden—in this case, ½ the AIDS' share of total DALYs—has some intuitive logic, ultimately the amount of health budget to allocate to AIDS depends on local health priorities. Likely, policy makers are trying to find an allocation that balances multiple competing objectives such as equitably disbursing resources across many disease

areas and maximizing total health gains. While allocating health resources by DALY share assures that AIDS receives a greater proportion of the health budget in countries where AIDS is a larger component of its overall disease burden, and we can take comfort in knowing that key strategic AIDS interventions are reasonably cost-effective, there is no reason to expect that an allocation of resources proportional to disease burden is one that leads to a maximization of health gains produced from the health budget. Second, as with the p-DIPI, the implied spending associated with the benchmarks is not bounded by resource needs. In other words, the levels of spending implied by the benchmarks could exceed the resources required to 'fully' address AIDS. For this reason, it is recommended that the benchmarks be considered in conjunction with the resource requirements to achieve ambitious goals such as the UNAIDS' Fast Track scenario.

4. Getting to benchmark spending levels

If the welfare gains from health are as large as some studies suggest (e.g. Summers & Jamison *Global Health 2035*, Lancet Commission on Investing in Health, UNAIDS' Fast Track), most countries would seem to be underinvesting in health. Still practical and political challenges typically constrain changes in fiscal space from new revenue generation or reallocation to be small and gradual^x.

For countries not meeting the benchmarks for AIDS spending discussed above, meeting them either means raising new revenue (e.g. through taxation), making

trade-offs within health sector, or trade-offs between AIDS and financing non-health priorities. When governance is of sufficient quality, society is best served by a policy process that considers AIDS in the context of all other demands on government resources.

Fiscal space is the 'room in a government's budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy.'^x Fiscal space can be created by (1) improving efficiency, (2) increasing revenue through economic

^a ODI
^x Heller 2006

growth (3) increasing revenue through greater tax yield, (4) reprioritization of spending, (5) writing off debt, or (6) increasing borrowing. Mobilizing additional external aid also creates fiscal space, but since the focus of this note is on domestic support for AIDS, we will set that mechanism aside.

Improving efficiency of program delivery is, in some sense, the best mechanism for creating fiscal space for a particular priority because it can be undertaken unilaterally by those who most value that priority. While, indeed, resources unlocked via efficiency gains in AIDS programs could be reallocated to non-AIDS priorities, the AIDS program may have the strongest claim on those resources by virtue of having 'created' them. Economic growth (i.e. increase in real per capita GDP) is the next most desirable source of new fiscal space, since it represents "new money." There will be competition for those new resources, and a policy process ought to exist which can ensure society's priorities are reflected in the allocation. But, all other mechanisms for increasing fiscal space either involve reallocating money (3 and 4) or carry substantial long-term sustainability risks (5 and 6).

Prospects for reaching AIDS spending benchmarks via economic growth.

In thinking about how fast a country could grow its AIDS spending toward the benchmarks, it may be reasonable to look at economic growth as a producer of new fiscal

space. In 100 of the 108 LMICs countries with population over 1 million, the IMF predicts positive economic growth exceeding 1% per year over the period 2013-2019, after adjusting for population growth. The predicted average annual growth across these countries is 3% and does not vary dramatically by epidemic type. In 52 of 108 countries, the AIDS response could be fully funded by allocating 10% of GDP growth to AIDS. In 14 of the remaining countries, total average annual RNE exceeds 100% of GDP growth.

One could refine this analysis by considering only the portion of the growth that would accrue to the government, assuming government expenditure as a share of GDP remains constant. In this case, 47 countries could fully fund their AIDS response with less than 25% of the additional government revenue available as a result of economic growth. Still many countries will not be able to fund the AIDS response fully by relying exclusively on new government resources resulting from economic growth; in 34 countries, including 8 of the 10 countries with the largest number of persons living with HIV (PLHIV), the total annual RNE exceeds total projected growth in government revenue. Moreover, in all but 28 countries, total annual RNE will exceed expected growth in government health budgets (assuming these budgets grow at the same rate as GDP per capita). If these 80 countries are going to finance their AIDS response domestically, they will need to generate more tax revenue or reallocate resources from other priorities.

5. Discussion

The demand for benchmarks for domestic AIDS spending emerged from the recognition that AIDS programs still have a lot of scaling up to do and international donors are unlikely to expand their support

of AIDS programs at the rate observed over the past 15 years. Despite the recognized fungibility of health aid and the debate about the merits of earmarking, major donor organizations have sought to

strengthen their counterpart financing requirements and encourage greater domestic contributions through partnership agreements. These efforts require an understanding of what level of domestic contribution is reasonable to expect. In other words, how much of the global price tag for a comprehensive AIDS response can countries themselves shoulder? As has been noted, to a large extent, the amount of AIDS spending a country can bear is a *choice* they make, in the context of other priorities.

The benchmarks discussed in this note provide a rough guide for identifying countries that could take on more of the financial burden of the AIDS response should they choose to, and those which will undoubtedly need continued external aid. At the same time, the focus on how much a country is

contributing to the AIDS response, is notably in tension with notions of self-determination and the more holistic health system approach espoused in the UHC movement. Perhaps more concerning, a preoccupation with the total amount spent may miss opportunities to emphasize the efficient production of desired health outcomes. Nor does it capture the importance, in terms of long-term sustainability, of achieving the 'AIDS transition' by preventing new infections. Nonetheless, even perfectly efficient service delivery has a cost, and requires the mobilization of resources. And, understanding what a country *could* contribute is important for those advocating for allocation of resources to AIDS within a valid policy process. For these reasons, a set of practical benchmarks for domestic AIDS spending is a useful part of an HIV policy toolkit.



HIV ERG

HIV Economics Reference Group

**BACKGROUND
BRIEF FOR FIRST
MEETING**

ECONOMICS
REFERENCE GROUP

Technical Working Group for
Sustainable Financing