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Expanding Long Term Financing Options for Middle-income Countries in Latin America and Caribbean with High HIV Burden

A Case Study from the Dominican Republic

Draft Submitted by

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Acronyms

AIS	AIDS Indicator Survey
ARV	Antiretroviral therapy
BSS	Behavioral surveillance survey
CBO	Community Based Organizations
CDC	Centers for Disease Control and Prevention, DHSS (USA)
CSW	Commercial sex worker
DHS	Demographic health survey
H(M)IS	Health (Management) Information System
IDU	Injecting drug user
IEC	Information, education, communication
IPT	Intermittent preventive treatment
IRS	Indoor residual spraying
KAP	Knowledge, Attitude and Practice
M&E	Monitoring and evaluation
MARP	Most-at-risk population (female sex workers, clients of female sex workers, injecting drug users and men who have sex with men)
MDG	Millennium Development Goal
METAT	Monitoring and Evaluation Technical Assistance and Training
MICS	Multiple Indicator Cluster Surveys
MSM	Men who have sex with men
NAC	National AIDS Council
NGO	Non-governmental organization
OGAC	The President's Emergency Plan for AIDS Relief: Office of the Global AIDS Coordinator
OVC	Orphans and vulnerable children
PEPFAR	President's Emergency Plan for AIDS Relief (USA)
PLWHA	People living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission (of HIV)
PPM	Public-private mix
SDA	Service delivery area
STI	Sexually transmitted infections
SW	Sex Workers
UNGASS	UN General Assembly Special Session
UNDP	United Nations Development Program
COPRESIDA	Dominican Republic AIDS Presidential Council
SESPAS	Secretariat of State for Public Health and Social Welfare
ODA	Official development assistance
NASA	National AIDS Spending Assesment
AIDS	Acquired immune deficiency syndrome
HIV	Human immunodeficiency virus
OECD	Organization for Economic Co-operation and Development
RNM	Resource needs model
PSI	Population Services International
MDG	Millennium Development Goal

Abstract

This draf report identifies existing financing sources for the on the Dominican Republic's national HIV/AIDS program; gathers the program's future service delivery objectives, both for preventive and curative interventions; estimates resource needs through the year 2023 under several scenarios; and calculates the potential financing gap for HIV/AIDS interventions through that year. To fulfill these objectives, the authors developed a model to project through the year 2023 several scenarios for the expected demand for and supply of HIV/AIDS resources.

The report presents four *demand* scenarios. The first, known as *baseline*, or *D1*, is a projection of the current situation through 2023. Three additional demand scenarios, D2 through D4, are developed and all three consider gains in program efficiency. *D2* assumes a reduction in program management costs, to bring them more in line with levels seen in other countries from Latin Amerca and the Caribbean region. *D3* is similar to *D2* but assumes an additional gain in program efficiency in the form of a drop in the costs of ARV therapies and condoms. D4 assumes the same program management costs as *D1* but also considers a drop in the costs of ARV therapies and condoms.

The report also presents four *supply* scenarios. The first, or *baseline* scenario, or *S1*, assumes that current financing sources maintain their recent trends. *S2* assumes a progressive growth in public spending with to cover the full costs of ARV treatment by the year 2015. S3 is similar to S2 but assumes that external financing remains constant from 2015 on because it is the year where they finish the existing contracts with the international institutions. S4 instead, is similar to S2 byt assumes that external financing drops through the age 2015 at an annual rate of 5 percent.

These four demand scenarios combined with the four supply scenarios give rise to 16 possible situations. Under demand scenario D3 no financing gaps is envisioned, but if the efficiency gains implicit in this demand scenario are not achieved, then there will be future gaps in financing and additional funding will be necessary to meet program costs. The report shows the magnitude of the gaps. This information will be presented to policymakers and donors in the Dominican Republic to look for solutions to the future projected financing gaps, should they become a reality.

The model designed for the Dominican Republic can be applied in the other two countries that are part of this study, Ecuador and Guatemala.

1. Introduction

The worldwide HIV/AIDS epidemic reached its peak in 1996, when 3.5 million new infections were reported, compared with 30 percent fewer new cases being reported in 2008. But owing to the occurrence of new cases and the longer life span of those afflicted with HIV/AIDS, the number of people living with HIV/AIDS worldwide continued to grow in 2008, reaching an estimated 33.4 million. That figure was 20 percent higher than in 2000, and three times as high as in 1990 (UNAIDS, 2009a).

In 2008 the adult prevalence of HIV/AIDS in Latin American was 0.6 percent, below the global prevalence of 0.8 percent; conversely, in the Caribbean prevalence was higher at 1.0 percent. The Latin America and the Caribbean (LAC) region as a whole reported a prevalence that was well below that of sub-Saharan Africa (5.2 percent) (UNAIDS, 2009a). Half of adults living with the virus are women. The latest epidemiological data suggest that the epidemic in Latin America remains stable.

The majority of countries in the region have prevalence rates of less than 1 percent, but the prevalence among specific groups, such as men who have sex with men and sex workers, is often very high. The most severe expressions of the epidemic occur in smaller countries such as Belize, Guyana, and Suriname, with prevalence ranging between 2.1 and 2.5 percent. For example, in the Bahamas and Haiti more than 2 percent of the adult population is living with HIV/AIDS. Higher prevalence rates are found only in sub-Saharan Africa, making the Caribbean the second-most affected region in the world. The following table shows the relevance of the problem in selected Latin America and Caribbean countries.

Table 1 People living with HIV/AIDS and deaths from this cause in LAC region, circa 2006

	Living with HIV/AIDS (LWHA)		Estimated deaths due to HIV/AIDS, 2007	Lethality: Number of deaths/ Number of PLWHA (%)
Country	All people	Adult (15-49) rate %		
Brazil	730,000	0.6	15,000	2.1
Costa Rica	9,700	0.4	<200	2.1
Chile	31,000	0.3	<1,000	3.2
Average Latin America	1,700,000	0.5	63,000	3.7
Peru	76,000	0.5	3,300	4.3
Argentina	120,000	0.5	5,400	4.5
Ecuador	26,000	0.3	1,200	4.6
Paraguay	21,000	0.6	<1,000	4.8
El Salvador	35,000	0.8	1,700	4.9
Panama	20,000	1.0	<1,000	5.0
Uruguay	10,000	0.6	<500	5.0
Mexico	200,000	0.3	11,000	5.5
Belize	3,600	2.1	<200	5.6
Colombia	170,000	0.6	9,800	5.8
Bolivia	8,100	0.2	<500	6.2
Haiti	120,000	2.2	7,500	6.3
Dominican Republic	62,000	1.1	3,900	6.3
Honduras	28,000	0.7	1,800	6.4
Nicaragua	7,700	0.2	<500	6.5
Guatemala	59,000	0.8	3,900	6.6
Guyana	13,000	2.5	<1,000	7.7

Source: UNAIDS (2008).

According to the World Bank (2003), worldwide concern over the HIV/AIDS epidemic responds to its triple impact on society:

- It destroys human capital, including accumulated life experience, job skills and knowledge.
- It weakens the mechanisms that generate human capital information, damaging the transmission of knowledge and potential productive capacity across generations.
- It makes investment in their education less attractive given the prospect that they may get infected, even if both parents remain uninfected.

A country's ability to fight the epidemic critically depends on the amount of resources it can mobilize to prevent and treat cases. Hence the importance of measuring financing needs resource availability. Success factors in the fight against HIV/AIDS include:

- The existence of national health care organizations
- Public funds support
- International funds support
- The presence and strength of national initiatives and organization around HIV/AIDS.

LAC countries have, with few exceptions (most notably Brazil), chosen the social security approach to achieve universal health care coverage. But a high prevalence of poverty, unemployment, and informal employment has restricted social security coverage to the relatively small share of the population in the formal sector of the economy. Given the epidemiological dynamics of the HIV/AIDS epidemic, it is expected that there will be an increasing demand for fresh resources each year. Social security institutions typically do not have enough resources to deal with the epidemic and therefore additional public, private, and international resources are required.

Despite resource limitations, the regional coverage of curative and preventive interventions to fight against HIV/AIDS is relatively high in LAC compared with the rest of the developing world. UNAIDS (2009a) reports the following:

> *Antiretroviral coverage in Latin America (at 54% in 2008) is above the global average, with especially high coverage achieved in several upper-middle-income countries (World Health Organization, United Nations Children's Fund, UNAIDS, 2009). In general, treatment coverage is higher in South America than in Central America.*

This report is concerned with the financing of HIV/AIDS interventions in the Dominican Republic, a country with an adult prevalence rate of 1.0 percent –a relatively high figure for regional standards. In 2008 per capita income in the Dominican Republic, measured in international dollars, was US$ 7,890, well below the LAC average of US$ 10,159. UNAIDS (2009c) summarizes the economic and HIV/AIDS situation in the Dominican Republic as follows:

- An economy that is highly dependent on the exterior and therefore one that is highly vulverable to external shocks, such as the 2007-08 world financial crisis.
- A prevalence of HVI/AIDS of between 0.8 and 1.2 percent, not too high for international standards, and one that has been descreasing in recent years as a result of prevention efforts carried out by the government with international funding.
- A country that shares the island with Haiti, the poorest country in the Western hemisphere and with the highest prevalence rates in the Caribbean region, making

Hispaniola the island with the highest prevalence of the Americas. The DR has a heavy Haitian migration, which increases its vulnerability to the epidemic.

- The financing of the national response is highly dependent on external funding. The funds provided by the government have increased over the last few years, but not substantially.
- The finalization of a WB loan and the time elapsed between two phases the Global Fund support resulted in the standstill of many activities, which has encouraged the perception among key stakeholders that the economic crisis endangers the sustainability of financing for the national response.
- New funding from the Global Fund is about to initiate and the country also has approved PEPFAR funds from the United States Government which will be assigned mainly to prevention.

Whereas prevalence of HVI/AIDS in the Dominican Republic is slightly higher than average, the coverage of ARV, at 40 percent in 2007, was below the regional average (UNAIDS, 2009c). Securing adequate financing, both domestically and internationally, to fund HIV/AIDS in the Dominican Republic is a priority concern of its government and of international agencies such as UNAIDS.

2. Study goal, objectives, and products

The goal of this study is to recommend a sustainable long term financial strategy to face the HIV/AIDS epidemic in Latin American countries. This document contributes toward that goal by examining the financial feasibility of the HIV/AIDS programs and interventions in the Dominican Republic. It is hoped that the lessons drawn from this country report may help other developing countries develop their own long-term financing strategy.

Report objectives are as follows:

- Identify existing financing sources for the DR's national HIV/AIDS program.
- Gather the program's service delivery objectives, both for preventive and curative interventions, and also for Estimate the goals of Dominican Republic on the coverage of HIV/AIDS.
- Estimate resource needs for 2018-2023 in a range between a low and a high scenario.
- Calculate the potential gap in relation to needed and require expenditure.
- Recommend sustainable measures to meet financing needs.
- Estimate country economic impact.
- Identify best practices and / or innovative financing mechanisms that could be adapted in other regions.

The methodology developed here for the Dominican Republic will be reviewed and revised, for subsequent use in two other study countries, Ecuador and Guatemala.

This project comprises four products. The first, already submitted, is a report containing the detailed study methodology. The second is a set of three country reports for the Dominican Republic, Ecuador, and Guatemala. The third is a regional report that would include the conclusions and findings in the three countries selected,

This report is the first draft of one of three country reports, for the Dominican Republic. It focuses on designing a model for demand and supply of funding for HIV/AIDS in the country and on determining any future gaps in financing for the period 2010-2023. These results will be

presented to decision makers in the country to generate a debate regarding the feasibility of implementation of the proposed scenarios and the identification of new funding sources to fill any of the projected gaps.

This report is organized as follows. After the introduction and the presentation of goals and objectives, the report offers a review of the literature on the costing of HIV/AIDS interventions, and a description of the current HIV/AIDS situation of the Dominican Republic. The next section describes the methods used for costing and financing. Next is a description of model findings under several scenarios in the Dominican Republic. Finally, we include some conclusions.

The annex contains further technical details.

3. Literature review

Projecting the costs and funding for HIV/AIDS poses several methodological problems, three of which are considered particularly relevant for this effort and are therefore addressed in this section. First, los datos epidemiologicos de diversas Sources muestran cifras distintas, lo que impone una dificultad adicional en la deficion de los escenarios de demanda de recursos necesarios

Second, there is international evidence that the epidemic may affect a country's present and future income stream, and that this may harm the country's ability to collect taxes and financing social programs, such as HIV/AIDS. If this happened in the Dominican Republic, then a model that projects public financing into the future should take into account the relationship between the epidemic and income, and the associated future drop in public funds resulting from the epidemic. Third, the projection of costs of preventive and curative interventions must the behavior of costs as coverage expands over time. It may be the case that as coverage expands of some HVI/AIDS intervention (for example, the delivery of ARV therapy) total costs increase but less than proportionally owing to possible economies of scale in the purchase and delivery of these drugs. Other interventions may also face economies of scale, or diseconomies of scale, where total costs increase more than proportionally with coverage. Third, the efficiency of delivery may improve or worsen with time. For example, current management costs may be reduced to more efficient levels that are consistent with the international practice, or the procurement of input, such as condoms, may be made more transparent trhough international tenders, hence lowering their unit cost.

It is important to take these three effects into account when developing the model to project future costs and financing. What follows is a review of the international literature on these issues.

(a) The social and economic costs of HIV/AIDS

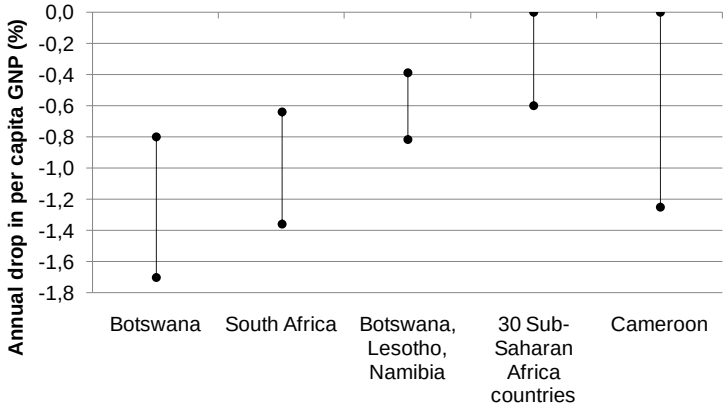
The prospect that the HIV/AIDS epidemic may affect economic growth is a central concern in this study which projects the future needs and availability of financing for HIV/AIDS interventions. If higher disease prevalence lowers economic output then it may negatively affect government tax revenue and its ability to finance social programs, such as the prevention and treatment of HIV/AIDS. If such as downward spiral exists, then an economic forecast model should take it into account to predict with accuracy the future availability of government financing. Haacker (2009) clearly explains this as follows:

The most visible fiscal consequences of HIV/AIDS include increased spending on prevention, care, and treatment, but the fiscal implications go far beyond this. As economic growth declines, the domestic tax base weakens and domestic revenues fall.

Will the countries that are the subject of the present study –the Dominican Republic, Ecuador, and Guatemala– experience, as a consequence of HIV/AIDS, a future drop in economic growth? And will such a drop significantly reduce the tax base and therefore the availability of government revenue to finance interventions in health in general, in HIV/AIDS in particular, and in other social programs?

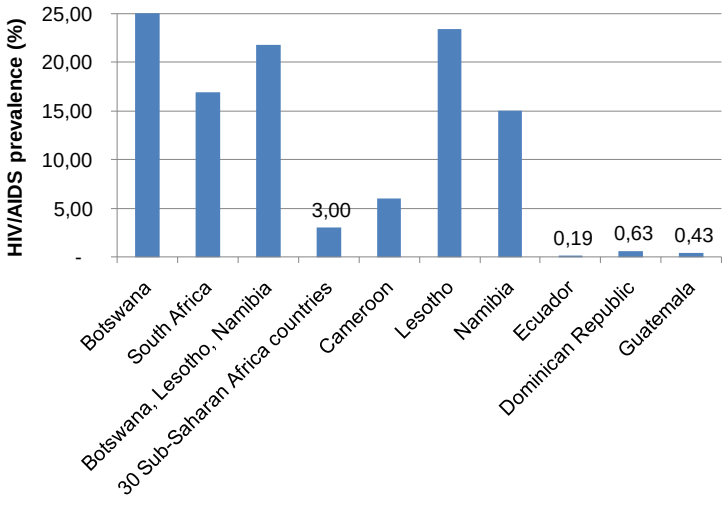
Several studies have estimated the long-term consequences of the HIV/AIDS epidemic on economic growth. Their findings may shed light on this issue in the case of Latin America and the Caribbean. UNAIDS (2004) Haacker (2009), and Stover and Bollinger (1999) summarize the results from several of them. While all of these authors mention that the empirical evidence is mixed and at times contradictory, they gather results from different studies and conclude that most likely there is a negative relationship between the extent of the epidemic and economic growth. Figure 1 presents selected results in the form of an estimated interval per country or group of countries from sub-Saharan Africa. It shows that in Botswane the epidemic could be responsible for an annual drop in per capita income varying rom a low of 0.8 percent to a high as 1.6 percent. For a group of 30 countries from the region, the annual drop in per capita income would be between zero percent (no impact) and 0.6 percent.

Figure 1 Selected countries from Sub-Saharan Africa: Annual drop in per capita GNP attributable to HIV/AIDS epidemic (percent)



Source: UNAIDS (2004), Haacker (2009), Over (1992), Stover and Bollinger (1999).

Figure 2 Selected countries from sub-Saharan African and Latin America: HIV/AIDS prevalence population ages 15-49 (%)



The influence of the HIV/AIDS epidemic on economic output no doubt increases with its severity, although the exact relationship cannot easily be established empirically. In 2004 the HVI/AIDS prevalence in Botswana was as high as 25 percent, the highest among the countries included in the above

figure. The estimated impact on economic growth was also highest for that country. Around the same year the average prevalence for the group of 30 sub-Saharan countries was about 3 percent. For these countries, Over (1992) estimated the estimated that the influence of the epidemic on economic growth was an annual reduction as high as 0.6 percent.

Countries from Latin America and the Caribbean exhibit HIV/AIDS prevalence rates that are generally much lower than those of countries in sub-Saharan Africa. This can be seen in Figure 2. Prevalence in the study countries varies from a low of 0.19 percent in Ecuador to a high of 0.63 percent in the Dominican Republic. It is therefore to be expected that in the countries selected for the current study any detrimental consequences of HIV/AIDS on economic output and public finances will be very low, if any. Therefore it does not seem necessary to model such an effect, because of its small expected magnitude, and it may not be possible to do so because the empirical estimates available in the literature come from countries with very different expressions of the epidemic.

But the HIV/AIDS epidemic has economic and social consequences that go beyond the loss of output. In the document "The economic costs of AIDS", based mainly on the situation of African countries, the World Bank Group (2003) discusses the loss of human capital resulting from the epidemic. It states that most studies about the macro-economic consequences of HIV/AIDS attempt to measured impact as the reduction in GDP growth but fail to address one of the main factors affecting economic growth, namely human capital. HIV/AIDS affects economic growth by the devastating combination of several factors that destroy human capital. As a disease mainly of young adults, it selectively destroys human capital by wiping out their life experience, work skills, and knowledge gained over the years. It also weakens and reduces human capital formation mechanisms. Specifically, the death of one or both parents of young children weakens the transmission of knowledge and the joint productive capacity of families. Additionally, the drop in income that follows the death of one parent or both of them reduces the amount of resources available for the education of surviving children. Furthermore, the possibility that children will get the disease in adulthood makes investment in their education less attractive. With less education and knowledge transmitted from parents to children, as well as deprivation of love and guidance from childhood, the children of HIV/AIDS victims who later become adults are less able to raise their own children and invest in their education. The effects of this process are only noticeable over the long-term and poor education of children today results in low productivity of the adult a generation later.

It falls beyond the scope and possibilities of the current study to model the economic and social consequences just discussed. In judging the various results, however, it is important to keep these consequences in mind.

(b) Economies of scale in the production and delivery of HIV/AIDS interventions

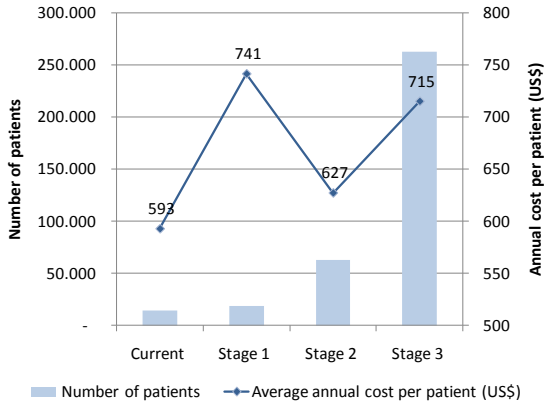
The current exercise involves the projection over time, through the year 2023, of the costs of curative and preventive interventions, both individual and collective, to fight HIV/AIDS in the Dominican Republic. It is difficult to project future costs of health services however, even if one knows with some certainty what will be the future volume of services to be delivered. For example, suppose that the government had plans to double by the year 2023, to 80 percent, the current coverage of 40 percent of ARVs. Given the large share of HIV/AIDS spending accounted for by ARVs in the country, it is crucial to predict what will be the future resource needs of this important cost item as future coverage expands. Will the total costs of ARVs also double along with coverage? Or will total costs grow more than proportionally or less than proportionally with

coverage? To answer these questions it is useful to look at past costs and their relationship with coverage in the country, to check, for example, whether the doubligin of coverage, from 20 percent to 40 percent, resulted in more or less than a doubling in spending. Also, projecting future costs requires knowledge about the future costs of inputs (Will pharmaceutical companies raise or lower the prices of ARVs? Will they provide further volume discounts?), the future costs of management (Will management costs of the ARV procurement facility have to double when coverage doubles? Will staff salaries increase annually irrespective of coverage?), and other future costs.

The international evidence on the economies of scale in the delivery of ARVs should, in principle, help predict what could happen to total costs in the Dominican Republic as coverage of ARVs expands. Evidence from Nigeria and Brazil, is presented in Figure 3 and Figure 4 below. Kombe *et al.* (no date, around 2007, Figure 3) examined the cost structure of ARV programs in Nigeria, including the costs of human resources, medicines, monitoring tests, and capital and training. Their aim was to predict future variations in costs associated with coverage expansion. Thus, their study was prospective. They concluded that a considerable expansion in coverage would more or less maintain average cost per patient covered constant, at around US$ 700 per covered patient per year.

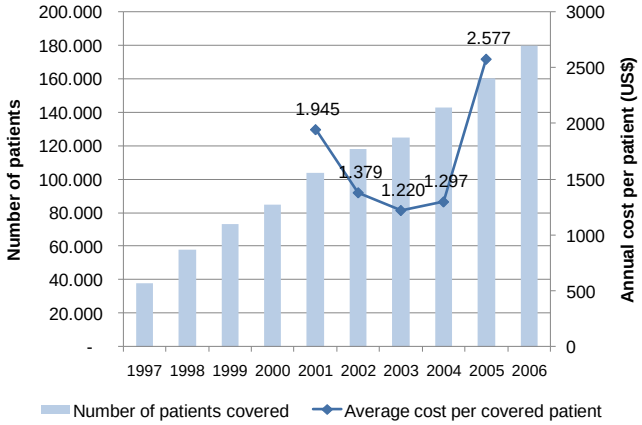
Nunn *et al.* (2007) carried out a retrospective study to explain the variation in total and average costs of Brazil's universal and publicly funded ARV program. They found that between 2001 and 2004 the average annual cost per patient covered dropped considerably, from US$ 1,945 to US$ 1,297, but then it doubled through the next year (Figure 4). The number of patients covered, increased throughout the period. The major driver of cost increases in Brazil was increased purchase quantities of six specific patented drugs and a locally produced generic. A decline in prices for many of the patented drugs that constitute the largest share of drug costs meant that nearly the entire increase in overall drug expenditures between 2001 and 2005 was attributable to increases in drug quantities. Had all drug quantities been held constant from 2001 until 2005, total costs would have increased by only an estimated US$7 million. In the absence of price declines for patented drugs, Brazil would have spent over twice as much, or US$2 billion on ARV drugs between 2001 and 2005, implying a savings of US$1.2 billion from price declines. They also found that Brazilian prices for locally produced generic ARVs were generally much higher than the lowest international prices meeting global pharmaceutical quality standards. The prices of Brazil's locally produced generics had risen in Brazil while declining globally. As a consequence, Brazil had spent an excess US$ 110 million by producing local generics instead of purchasing them in international markets.

Figure 3 Nigeria: Patients receiving ARVs and average annual cost of ARVs per patient , year 2007 and projected



Source: Kombe *et al.* (circa 2007).

Figure 4 Brazil: Patients receiving highly active antiretroviral therapy (HAART) and average annual cost of ARVs per patient , 1997-2006



Source: Nunn et al. (2007).

When the average cost *per unit of output* (for example, per patient receiving ARV therapy) drops as output expands, economists say that they are in the presence of *economies of scale*. That is a desirable situation from the perspective of financing, because each person covered, or each unit of service delivered, will *on average* cost less. So a doubling of coverage will result in less than a doubling in the associated costs. This implies that the larger the program, the smaller the amount of resources that will be required to pay for each person covered, or patient seen, or output delivered.

Kumaranayake (2008) reviewed economic methodologies to generate a conceptual framework for classifying existing data on the costs of scaling up HIV/AIDS programs, looking at both short-run and long-run perspectives. She found that there is growing evidence of scale variation among the costs of HIV/AIDS interventions, and that it may explain 26-70 percent of cost variation across locations for similar interventions. Average costs may become larger or smaller as the volume of services expands (as was the case in Brazil's ARV program between 2001 and 2005), depending on the level of coverage and type of intervention. Key constraints to scaling up include infrastructure investments. She concluded that the available evidence suggests that cost efficiencies associated with scale may reflect different ways of delivering services at higher volumes and also variations in quality. But she concluded that there is a very limited economic evidence base and mechanisms to integrate economic analyses into routine programme monitoring are recommended.

According to Kumaranayake (2008), there is evidence of economies (or diseconomies) of scale in HIV/AIDS interventions. Interventions with small proportions of fixed costs such as VCT and IEC exhibit declining average costs as the scale of activity expands, so it is economically optimal to run larger programs. At the other extreme, interventions related to health benefits (STI or prevention of mother-son) are likely to face diseconomies of scale and the U-shape of their average cost curves suggests that there is an optimum size for such programs. The following table summarizes the author's findings regarding the relationship between scale and total or average costs.

Table 2 Evidence from the literature about economies of scale in HIV/AIDS programs

Program	Description	Findings
Vertical transmission	Empirical Cost 15 programs in India	The variation in scale explains 42% of the variation in average cost.
VCT	Malawi. Empirical econometric analysis of costs of VCT, data over 34 months	Customers range from 200 to 1600 per month; fixed costs range from 9% to 21%. Significant economies of scale estimated rate 1.5. Changes in the production function.
VCT	India. VCT 17 empirical cost data, more than 12 months.	334-7802 clients per site per year. Fixed costs average 12.4% of total annual costs. The variation in the cost per customer is assigned 73% to scale.
VCT	South Africa. Cost rapid empirical test 1 Clinical data of 12 months.	662 customers in 1 year, costs decrease by 66% in months of greater burden, suggesting economies of scale
Prevention activities in targeted population"	India. Empirical Cost 15 prevention programs among sex workers, more than 12 months.	Range TS 803-6379. 5.2-8.3% fixed costs (rent, capital). Significant relationship between the scale and size of the program, suggesting economies of scale. Finding of reduced time to be the largest program.
Prevention activities in targeted population"	India. Empirical cost of 17 prevention programs in TS. More than one year	Range TS 205-2008. Fixed costs 13-40% (median 15%). 50% of the variation in the average cost attributed to the scale, controlling factors - different production functions. Nonparametric analysis shows average cost curve in U, with the minimum average cost occurring in the size of TS 1500 year.
Prevention activities in targeted population"	India. Empirical Cost in 15 districts, over 24,000 sex workers in more than 18 months.	Fixed costs range from 11 to 32% of the total cost. Sevenfold reduction in the average cost per TS on a scale of activities by district TS 3000. Threefold reduction in average costs for projects started later.
Prevention activities in targeted population""	India. Econometric analysis of 78 prevention projects funded by the state and TS 16 projects, more than 12 months.	Analysis of expenditure data shows that economies of scale were not exhausted, a fall of 0.002% in the total cost for each person served. The estimation using TS data show an efficiency point on the scale 1.750-2000 people served, approx.
Prevention activities in targeted population"	India, Russia and South Africa. Cost empirical TS 40 programs.	The scale explains 38-88% of the variation in average costs. Decrease in average costs, not increase
Prevention activities in targeted population"	Russia. Empirical cost of 22 projects to UDI	The scale accounts for 45% of the variation in costs. Turn the scale is associated with a 34.5% reduction in average costs.
Treatment of STDs	Thailand. Empirical analysis of incremental costs of STDs	The expansion of evening hours of care in STI clinics 2000 allows processing of additional clients at 31 dol. Everyone
Treatment of STDs	Cambodia. Empirical Cost STDs interventions, a period longer than 3 years	The number of annual visits increased 3 times from 4369 to 13,329 and the cost per visit was reduced to almost half. The decrease is attributed to the large increase in visits.
Treatment of STDs	Econometric analysis of average costs of STDs obtained from 53 studies.	The scale range is from 3 to 63,693 people a year. The estimates show a small but significant scale effect suggesting that unit costs decrease with scale.
Treatment of STDs	India. Empirical cost analysis in 12 districts, reaching more than 20,000 TS, more than 18 months.	The average cost per person treated per district was 27 dol. and there was a sixfold reduction in average costs by increasing the level of care for patients in more than 1400 patients per district.
Treatment of STDs	India, Mexico, Russia.	There is a modest effect on the scale with an explanation of 42-70% of costs for the change of the scale. It shows an increase in average costs.
VCT, ITS, mercadeo social del condón, IEC	Uganda. Cost empirical randomized over 4 years.	Various interventions to 96,000 individuals within communities. An increase of 74% led to a 34% reduction in average cost, suggesting scale effects.
IEC	Mexico. Empirical Cost 22 programs	The scale variation explains a proportion of 91%, doubling the scale is a 64% reduction in average costs
Prevention activities in targeted population"	34 sub-Saharan countries. Scale econometric analysis of program costs, to pursue the relationship between the infrastructure of health systems and scale to an increase of 25% coverage	The marginal costs are higher than average cost, suggesting diseconomies of scale. A 25% increase in marginal costs are approximately 7 times higher in care and care for prevention.

(c) Improvements in efficiency

Stover et al. (2006) find that a strong, global expanded commitment to prevention programs targeted at sexual transmission and transmission among injecting drug users could avert 28 million new worldwide HIV infections between 2005 and 2015. This figure is more than half of the new infections that might otherwise occur during that period in 125 low-and middle-income countries. Although preventing infections, this new investment would require about US$ 122 billion over this period and would reduce future needs for treatment and care. The analysis suggests that it will cost about US$ 3,900 to prevent each new infection, but it will produce savings of US$ 4,700 in forgone treatment costs. Thus, greater spending on prevention not only would prevent more than half the new infections that would occur but from 2005 and 2015, but it would produce a net financial actually saving as future costs for treatment and care are averted. The figures for the LAC region are as follows: prevention of one case costs US$ 5,045; present savings and treatment costs averted US$ 12,330.

Box 1. HIV/AIDS epidemic and response in LAC region

In Latin America and the Caribbean as a whole, the HIV/AIDS epidemic does not have the alarming proportions of sub-Saharan Africa, where the adult prevalence was about 5.2 percent in 2008 (UNAIDS, 2009a). Yet the Caribbean exhibits the the second highest level of adult HIV/AIDS prevalence outside of sub-Saharan Africa (about 1.0 percent), and Haiti is the hardest hit country in this region, with an adult prevalence of 2.2 percent of the population. In the LAC region prevalence is not linked with income, as can be seen in Figure 5. Bolivia, which is nearly as poor as Haiti, has a prevalence that is below the regional average and only a fraction of Haiti's. Trinidad & Tobago, the richest country in LAC, has the third highest prevalence. In LAC there is a slightly negative relationship between national income and total spending on HIV/AIDS (including public and private domestic and international resources; Figure 7). The Dominican Republic and Ecuador, two of the three countries selected for this study, exhibit lower total spending than would be expected given their income, whereas Guatemala spends about what one would predict given its income. In addition, in LAC the combined spending on HIV/AIDS, expressed as a proportion of national income, increases with prevalence, implying that the countries with a more severe epidemic devote a greater share of own and international resources to fight it (Figure 8 and Figure 9).

Figure 5 Prevalence of HIV/AIDS, % population 15-49

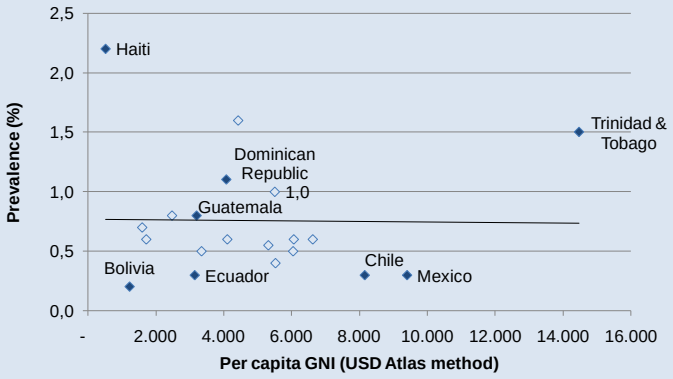


Figure 6 Total HIV/AIDS spending as % of GNI

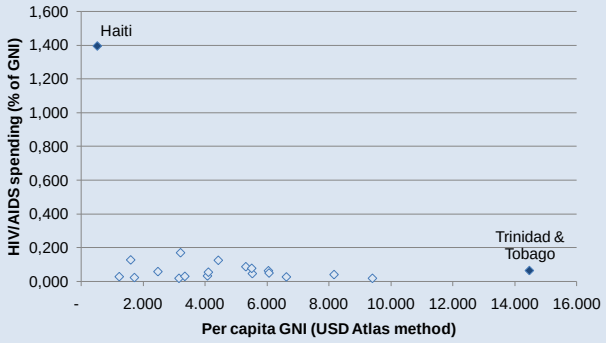


Figure 7 Total HIV/AIDS spending as % of GNI, excluding Haiti

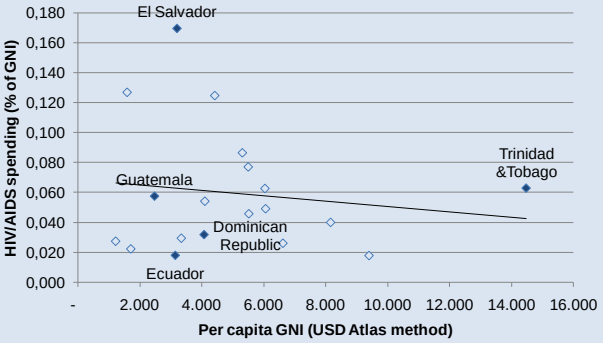


Figure 8 Prevalence of HIV/AIDS, % population 15-49

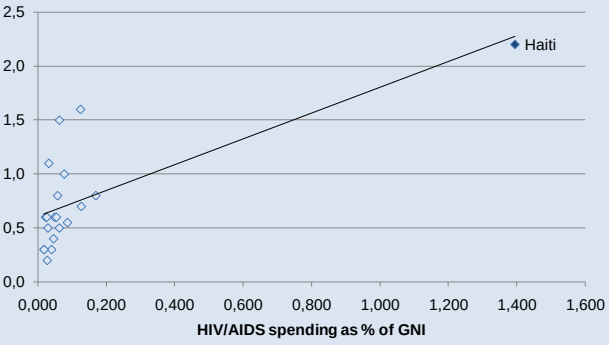
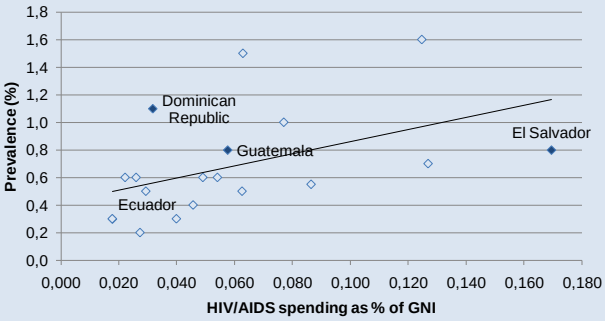


Figure 9 Prevalence of HIV/AIDS, % population 15-49, excluding Haiti



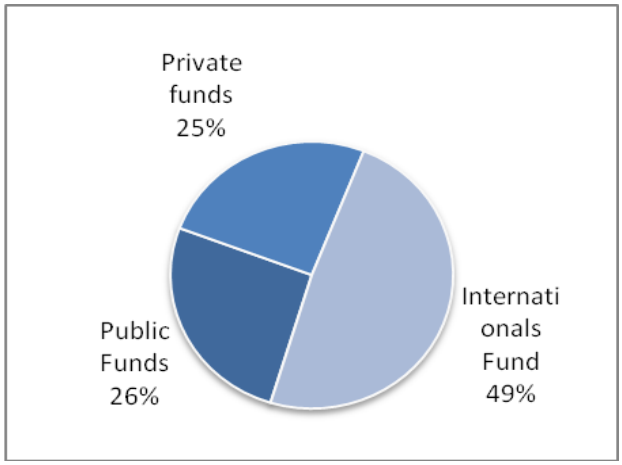
4. Current situation in the Dominican Republic

An informal notification of the the first case of AIDS in the Dominican Republic was made in 1983. Since then the Secretariat of State for Health and Welfare made the reporting of AIDS cases mandatory. The following describes the current situation of the country, including the epidemic, spending, and a comparison of the current situation with countries in the region.

According to recent research from 2008 onwards, the epidemiological situation is as follows:

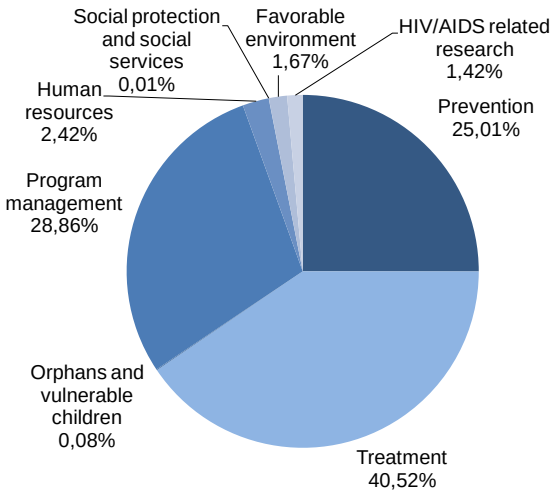
- *Population:* In 2008 total population in the Dominican Republic was 10.2 million. The World Bank (year) projects that it will reach 11.8 million people by 2023, with total growth of 15 percent in the period.
- *Population HIV/AIDS*: By the end of 2008 there were 22,925 reported cases in the country out of an estimated total population living with HIV/AIDS of 62,000 (for a notification rate of 37 percent). Adult prevalence was 0.9%. The reported case FatalityCase fatality rate among HIV/AIDS patients was 17 percent.
- *Expenditure on HIV/AIDS during 2008*: In 2008 the Dominican Republic produced its first NASA report. It reported total HIV/AIDS spending of about USD 31.3 million, of which just 26% were from public sources, 25 percent from private domestic sources, and 48,7 percent from international sources. The allocation of spending was that shown in Figure 11. Nearly 95 percent of all resources were devoted to three main spending categories: treatment, prevention, and program management.

Figure 10 Dominican republic: HIV/AIDS sources of financing, 2008 (%)



Source: NASA 2008.

Figure 11 Dominican Republic: HIV/AIDS spending structure, 2008 (%)



The following table resumes the expenditure by each funds and their allocation in year 2009:

Table 3 Dominican Republic: Sources and Uses of HIV/AIDS financing, 2009 (US$ million and percent)

Uses of financing	Sources of financing				
	Public	Private	International	Total	Percent
Prevention	1,465,829	2,385,197	3,983,698	7,834,724	25,0
Care and Treatment	2,605,543	5,475,745	4,614,832	12,696,120	40,5
Orphans and vulnerable children	23,814	-	369	24,184	0,1
Program management	3,346,533	7,099	5,689,741	9,043,374	28,9
Human resources	207,380	44,530	506,310	758,221	2,4
Social protection and social services	384	-	3,071	3,455	0,0
Favorable environment	174,120	-	350,413	524,533	1,7
HIV/AIDS research	323,029	2,508	120,861	446,398	1,4
Total	8,146,633	7,915,079	15,269,296	31,331,008	
% Total	26,0%	25,3%	48,7%		

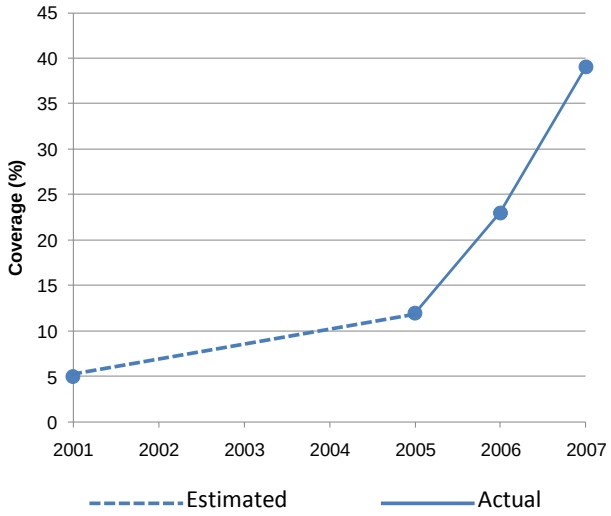
Source: NASA 2008.

The allocation of funds to the various spending categories was as follows:

- *Prevention:* 51 percent of spending was financed by international funds, while private funds accounted for 30 pernt of the total.

- *Care and treatment*: Private sources accounted for the largest share of spending (43.13 percent), while public sources accounted for 21 percent.
- *Orphans and vulnerable children*: It was financed almost entirely by public funds (99%), with no private sector input.
- *Management and Program Management*: It was financed by international sources (63 percent) and public funds (37 percent).
- *Human resources*: Two-thirds of financing came from international funds and just over one-fourth from public funds.

Figure 12 Dominican Republic: Estimated antiretroviral coverage, 2001 and 2005-07 (%)



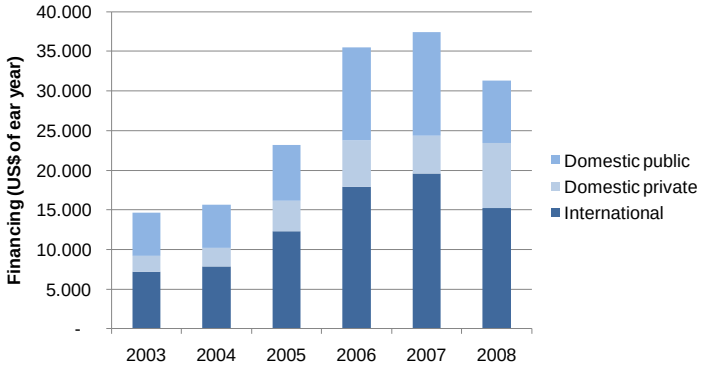
Source: UNAIDS (2009c).

- *Social protection and social services*: Nearly 90 percent of this item for paid for by international funds, and the rest by public funds.
- *Enabling environment*: International sources paid for two-thirds of this spending category and public sources paid for the remaining third.
- *Research related to HIV*: 72.36% financed by public funds and only 0.56% privately funded.

In the largest expenditure categories, public funding was directed primarily toward management and administration of programs. International funds went mostly to program management. Private financing, instead, was directed primarily toward treatment.

Between 2003 and 2007 total HIV/AIDS financing increased every year, more than doubling its initial amount, but it fell by 16 percent in 2008 as a result of the end of a major World Bank loan. Private financing experienced the highest increase of all three financing sources.

Figure 13 Dominican Republic: Sources of HIV/AIDS financing, 2003-08 (US$ of each year)



Source: Fundación Plenitud, República Dominicana

5. Methods

This section describes the model built to project spending and financing of HVI/AIDS interventions in the Dominican Republic, the model's assumptions, and the data sources.

(a) Model description

This section presents the methodology developed to project HIV/AIDS spending and financing, and to estimate any future financing gaps. It first describes the methods used to forecast the epidemic, then it explains how the associated prevention and treatment costs were drawn, next it presents the assumptions made to predict financing, and, finally, it shows how financing gaps are derived.

The authors made annual projections for the period 2009-2023 of both resources required (demand) for HIV/AIDS and resources offered (supply). The projections of demand consisted of three different scenarios while those of supply included seven different scenarios. The combination of these scenarios gave rise to 12 different situations for which they computed the corresponding financing gap. Projections of both demand and supply are presented in organized items in accordance with the categories defined in the country's NASA.

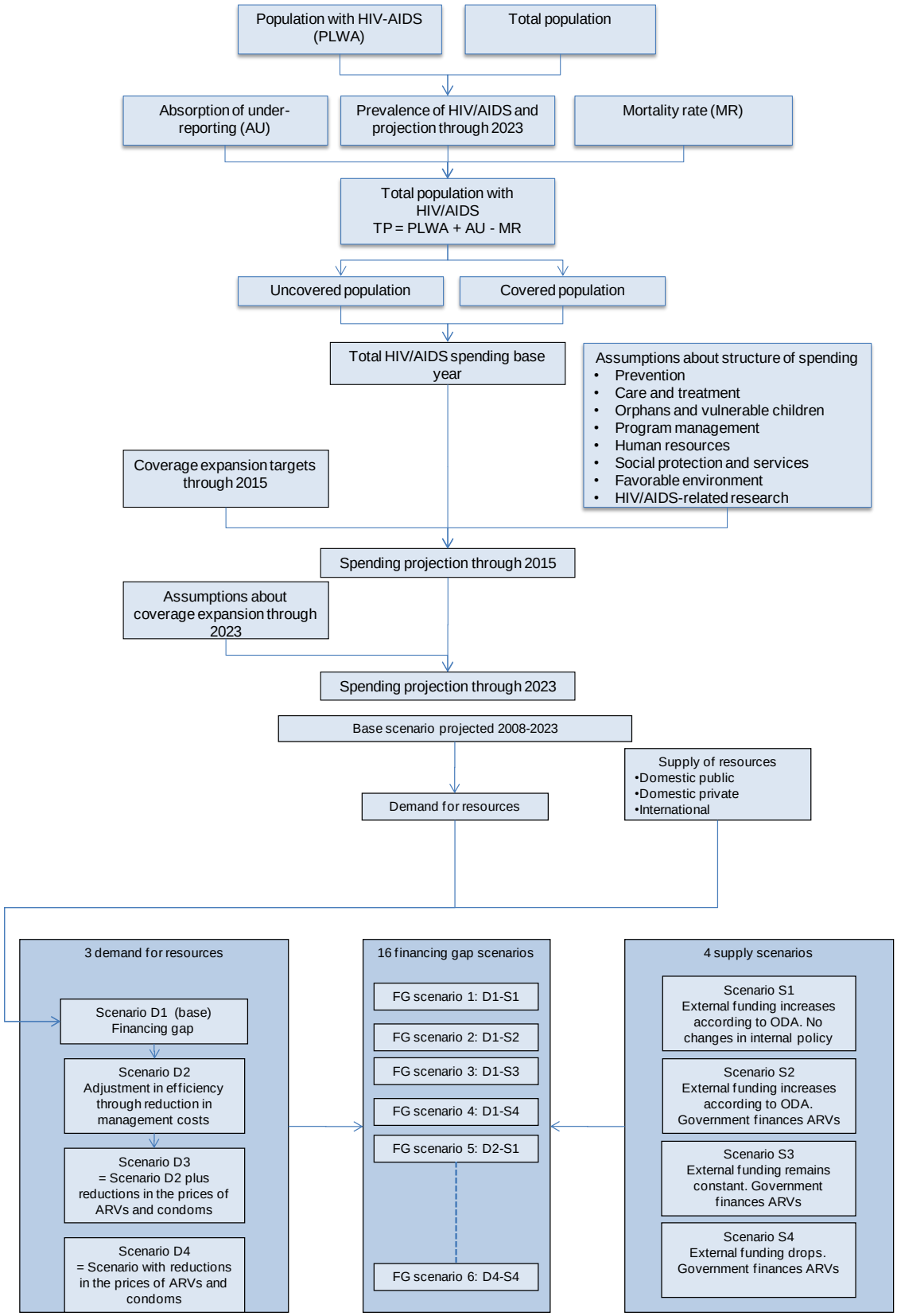
Epidemic: The path of the epidemic was drawn through the year 2012 using official estimates made by national authorities and validated by UNAIDS. Beyond 2012 the authors adopted a phased approach based on the following six parameters that characterize the epidemic:

- Current and projected total population
- Cases reported
- Estimated cases
- Prevalence of reported cases
- Underreporting
- Case fatality rate

The year 2008 was defined as the base given that the first NASA estimates have just been made available for that year. Total population in the country was 9.83 million, the number of reported cases was 22,925, and the total estimated population living with HIV/AIDS was 62,000 people (underreporting of 63 percent). The prevalence of reported cases was 0.23 percent.

The model includes a reduction in the under-reporting and the fatality rate. This permits to adjust the demand to the number of cases. The under-reporting is the rate between total and declared cases, thus representing the non-declared rates. The model assumes a gradual reduction of this rate, due to a larger coverage, information and commitment to fight the epidemic. Based on the situation observed in the country for the last three years, the rate of scale-up for declared cases is estimated at an annual three percent. This rise on the under-reporting would imply that by 2023, declared cases would account for 47 percent of the total under-reporting rate, currently in 61 percent. In this period, the subnotification rate is reduced by 8 percent.

Figure 14 Projection model for establishing furure financing gaps



The case fatality rate was also included in the cases projected through the model. This helps to analyze the expenditure projection by PLWHA, who actually use and demand resources. During 2008, the fatality rate was 16.64 percent. As a result, this rate is expected to decrease in the following years due to a larger ARV coverage and a better notification, which makes the rate decrease if the denominator increases. The model assumes that the fatality rate will show a decline 1 percent per year, reaching a rate of 10 percent by 2015, according to Dominican Republic history. This rate should remain constant until 2023.

If these previous factors are taken into account, the cases between 2010 and 2023 are expected to grow, as shown in the following table:

Table 4 Total population and PLWHA growth projections

Year	Total Population (thousands)	Population Growth rate	PLWHA population	PLWHA Growth rate
2013	10,62	1,22%	22.528	2,38%
2014	10,74	1,19%	23.053	2,33%
2015	10,87	1,15%	23.580	2,29%
2016	10,99	1,12%	23.749	0,72%
2017	11,11	1,08%	24.007	1,09%
2018	11,22	1,04%	24.258	1,05%
2019	11,34	1,02%	24.507	1,03%
2020	11,45	0,99%	24.749	0,99%
2021	11,56	0,95%	24.985	0,95%
2022	11,67	0,93%	25.216	0,93%
2023	11,77	0,90%	25.443	0,90%

Source: Authors

According to these estimations, PLWHA has a higher growth rate than the total population until 2015. In 2016, however, the growth rate declines due to a stable case fatality rate. Similarly, the PLWHA growth rate shows a decline on 2021 with respect to the previous year due to the stagnation of under-reporting. The last two years of the estimation show that the PLWHA growth rate has the exact same growth rate as the total population.

(b) Projections of demand for resources

The analysis and projection of the costs of the Dominican Republic is based on the 2008 MEGAS. Dominican Republic has only applied the AIDS Spending Measure (MEGAS) once, in 2008. This work is in process of being finished, by Fundación Plenitud (Plenitud Foundation).

The estimation of 2008 MEGAS is based on ordinary USD and classified into 8 spending categories.

- Prevention
- Care and treatment
- Orphans and vulnerable children
- Program management
- Human resources
- Social Protection and social services
- Favorable environment HIV/AIDS Resarch

To calculate the spending projection, the same spending categories and its respective functions have been used. The spending projections established will be in 2008 USD.

To project each cost category, two main classificacions were included: those where the country has committed to achieve the coverage targets for 2015 and those where no such targets have been identified, or where none of them apply.

Coverage targets Interventions. The Dominican Republic has proposed to meet the universal coverage in 2015. The cost categories with defined coverage targets account for 59.3 percent of the AIDS spending in 2008. Each category and function showing the percentage in relation to the total expenditure, the current coverage percentage and the coverage target by 2015 is presented on the following table.

Table 5 Description of cost categories with current coverage and coverage targets by 2015

Costs categories	Function: detail of cost categories	% total expenditure	Total coverage	Coverage target at 2015
Prevention	Comunication for social and behavioral change	3,4%	38,0%	100,0%
	Voluntary testing and counseling (VTC)	2,2%	21,0%	80,0%
	Risk reduction for the vulnerable and accesible populations	1,3%	14,0%	80,0%
	Prevention – young at school	0,3%	1,3%	45,0%
	Prevention program for sex workers and clients	0,7%	64,0%	80,0%
	Prevention program for men having sex with men	0,5%	79,0%	80,0%
	Condoms in public sectorand market	9,7%	37,0%	100,0%
	Prevention of Mother-to-Child Transmission (PMTCT)	3,0%	40,0%	80,0%
	Blood safety	0,5%	50,0%	100,0%
Care and treatment	Ambulatory care	37,3%	44,8%	100,0%
	Hospital care	0,0%	44,8%	100,0%
	Care services and treatment not itemized by intervention	0,1%	44,8%	100,0%
Orphans and vulnerable children	Services for OVC not itemized by intervention	0,1%	4,3%	100,0%
TOTAL		59,3%		

Source: MEGAS 2008 - UNGASS 2008.

The current coverage is based on the UNGASS 2008[1] report. The goals for 2015 are the result of estimations from national authorities.

In order to comply with the goals, the growth rate was estimated between the baseline and the coverage target expected for 2015. That rate was applied to project the expenditure from 2009 to 2015.

Once universal coverage is reached, the epidemic growth rate was applied to the interventions made to the HIV/AIDS population, while the total population growth rate was applied to the rest. The parameter used for each category is detailed in the following table.

[1] Currently, UNGASS report is in process. This report can help to redefine the model.

Table 6 Detail of projections by population or PLWHA 2015-2023 growth

Costs categories	Function – Details of Cost categories	PLWHA growth rate	Total population growth rate
Prevention	Comunication for social and behavioral change		X
	Voluntary testing and counseling (VTC)		X
	Risk reduction for the vulnerable and accesible populations		X
	Prevention – young at school		X
	Prevention program for sex workers and clients		X
	Prevention program for men having sex with men		X
	Condoms in public sectorand market		X
	Prevention of Mother-to-Child Transmission (PMTCT))	X	
	Blood safety	X	
Care and treatment	Ambulatory care	X	
	Hospital care	X	
	Care services and treatment not itemized by intervention	X	
Orphans and vulnerable children	Services for OVC not itemized by intervention		X

Criteria used: X

No goal interventions. Functions with no goals were calculated in order to see the percentage these accounted for in the total expenditure during 2008. After projecting the functions with defined goals, the total expenditure projected until 2015 was calculated out of that subgroup of activities. This expenditure was distributed by maintaining the expenditure percentages of 2008. The cost categories with no goals used a constant annual growth rate, according to this expenditure projection. Each category and function showing the percentage in relation to the total expenditure and the annual factor used in the projection is presented in the following table.

Table 7 Detail of calculation percentages in cost categories with no goals

Costs categories	Function – details of costs	Total expenditure (%(	Annual growth rate until 2015
Prevention	Community Mobilization	1,2%	18%
	Preventing HIV transmission targeting people living with HIV/AIDS (PLWHA)	0,0%	18%
	Harm reduction programmes for inyectable drugs consumers	0,0%	18%
	Prevention Programmes in the workplace	0,1%	18%
	Prevention, diagnosis and treatment of sexually transmitted infections	3,0%	18%
	Prevention activities not itemized by interventions	2,3%	18%
Orphans and vulnerable children	Services for OVC s.c.o.	0,1%	15%
Program managment	Planification, coordination and management programmes	7,4%	15%
	Administration and transaction costs related to the management and payment of funds	0,7%	15%
	Surveillance and evaluation	1,0%	15%
	Operational research	0,1%	15%
	Serological Surveillance (serum surveillance)	0,7%	15%
	Drugs supply systems	0,9%	15%
	Information technology	0,8%	15%
	Monitoring patients	0,2%	15%
	Infrastructure upgrade and construction	2,2%	15%
	Management and administration programmes not itemized by type	8,9%	15%
	Management and administration of s.c.o programmes	3,4%	15%
Human resources	Monetary incentives for human resources	1,2%	15%
	Capacity building	2,1%	15%
	Human resources not itemized by type	0,2%	15%
Social protection and social services	Social protection through monetary benefits	0,0%	15%
	Social protection through in-kind benefits	0,0%	15%
	Social protection and social services not itemized by type	0,3%	15%
Enabling environment	Mass Advocacy	0,9%	15%
	AdvocacyHuman rights program	0,3%	15%
	AIDS Specific Institutional Development	0,4%	15%
	Specific AIDS programmes for women	0,8%	15%
	Programmes to reduce gender violence	0,1%	15%
	Favorable environment not itemized by type	0,0%	15%
	Favorable environment s.c.o.	0,0%	15%
HIV/AIDS research	Social Sciences research	1,3%	15%
	Research activities related to HIV not itemized by type	0,0%	15%
TOTAL		40,7%	

Source: MEGAS 2008-Consultants

The same criterion used in the categories and coverage targets is applied from 2016 onwards. The interventions for PLWHA are applied the epidemic growth rate, while other interventions are applied the total population growth rate. The parameter used in every cost category is shown in the following table.

Table 8 Detail of calculation percentages in cost categories according total population growth rate or PLWHA growth rate 2010-2023

Costs categories	Function: cost categories detail	PLWHA growth rate	Total population growth rate
Prevention	Community mobilization		X
	Preventing HIV transmission targeting people living with HIV/AIDS (PLWHA)	X	
	Harm reduction programmes for inyectable drugs consumers	X	
	Prevention Programmes in the workplace	X	
	Prevention, diagnosis and treatment of sexually transmitted infections	X	
	Prevention activities not itemized by interventions	X	
Orphans and vulnerable children	Services for OVC s.c.o.		X
Program managment	Planification, coordination and management programmes		X
	Administration and transaction costs related to the management and payment of funds		X
	Surveillance and evaluation		X
	Operational research		X
	Serological Surveillance (serum surveillance)		X
	Drugs supply systems		X
	Information technology		X
	Monitoring patients		X
	Infrastructure upgrade and construction		X
	Management and administration programmes not itemized by type		X
	Management and administration of s.c.o programmes		X
Human Resorices	Monetary incentives for human resources		X
	Capacity building		X
	Human resources not itemized by type		X
Social protection and social services	Social protection through monetary benefits		X
	Social protection through in-kind benefits		X
	Social protection and social services not itemized by type		X
Favorable environment	Advocacy		X
	Human rights program		X
	AIDS Specific Institutional Development		X
	Specific AIDS programmes for women		X
	Programmes to reduce gender violence		X
	Favorable environment not itemized by type		X
	Favorable environment s.c.o.		X
Investigación relacionada con VIH/SIDA	Social Sciences research		X
	Research activities related to HIV not itemized by type		X

Criteria used: X

(c) Long term supply of resources for HIV/AIDS

This phase of the projection includes three scenarios. The first is the baseline scenario (D1), which includes the compliance of the targets and the distribution of the residual funds as it is currently established. The other scenarios, on the other hand, make an adjustment in efficiency, whether to reduce the program management expenditure (D2) or to adjust the prices of ARVs and condoms (D4). Finally, one of the scenarios (D3) is the result of the sum of reducing the management expenditure and adjusting the prices. The data, assumptions and calculation methods applied to project the funding demand are explained on the following:

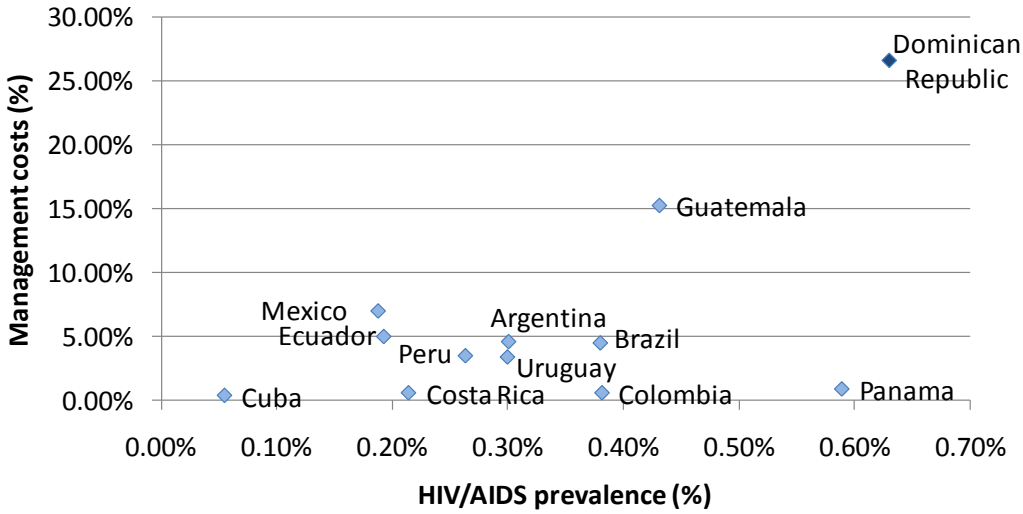
- *Scenario D1: Baseline*

The current expenditure is projected by assuming the compliance of the targets and the growth of the total and the PLWHA population

- *Scenario D2: Scenario D1 + reduction in program management expenditure*

For 2008, management costs and program management in the Dominican Republic accounted for 26.4 percent. This almost equals the costs of prevention (28%). It is clear that the management costs are very high in comparison to other countries in the region with similar revenues. The percentage of management expenditure, together with the prevalence rate of the Dominican Republic and Latin America and the Caribbean countries with similar revenues, are shown in the following figure:

Figure 15 Expenditure comparison between Dominican Republic and Latin America and the Caribbean countries



Source: Authors from UNAIDS 2010 (www.unaids.org) and World Bank 2010 (www.worldbank.org).

Dominican Republic is the country with the highest management expenditure in comparison to other countries, even by considering its prevalence.Guatemala follows it with an expenditure of 15 percent and a prevalence of 0.43 percent. Consequently, it can be concluded that Guatemala spends 12 percent less than Dominican Republic, and 0.2 percent less in terms of prevalence.The details of the prevalence and the management expenditure percentage are shown in Annex D.

It is estimated that it is possible to increase the efficiency of the management program, and the proposal is a reduction of this expenditure.

Based on the experience of other countries of the region, in this scenario a correction by efficiency in the expenses of management and administration of programs is done. This correction is the gradual reduction of the expenses of management and administration of the program until reaching a 15% of the total cost in 2015, to become stabilized in that proportion in the following years.

- *Scenario D3: Scenario D2 + price adjustment*

In this case the correction was done by efficiency in the expenses of management and administration of programs plus reduction ARV and condoms prices. The adjustment of prices includes two components: the ARV and condoms prices.

ARV price adjustment. ARV expediture is a fundamental component in AIDS expenditure, accounting for 20.4 percent of its total. As other countries have experienced, the possibility of buying on a large scale, such as buying together with other countries from the Caribbean and Central America have an important effect in the reduction of prices. Likewise, the prices have experienced a global decline, as a result of the negotiations.

Taking this into consideration, the Dominican Republic negotiation with the Global Fund within the RCC is planning to acquire a basket of ARV drugs. This basket implies rationalizing the patients' schedules and reducing its prices. This price reduction is estimated at 24 and 46 percent for first-line and second-line drugs respectively by 2015. From that year onwards, ARV prices would remain constant.

Condoms price adjustment. Condoms current expenditure in the country accounts for 9.7 of the total. It is the second major component in AIDS expenditure. Currently, 62 percent of the supply of condoms in the Dominican Republic is provided by PSI, through a social marketing program, at a price of 0.10 USD. The price of each contraceptive currently amounts to 0.16 USD.

As a result, a gradual price reduction is assumed in order to build this scenario. This reduction is expected to account for 37.5 percent of the unit cost by 2015. From 2016 onwards, the prices will remain constant in 0.10 USD per unit.

- *Scenario D4: Price adjustment:*

Under this scenario, the price reduction of ARV and condoms is considered an isolated effect.

(d) Long term supply of resources for HIV/AIDS in the Dominican Republic

For this projection, four scenarios are included. The first is the baseline scenario (S1), while the second (S2) includes some changes in the funding of ARV drugs, which will be completely taken by the State. The third also includes modification in the funding sources, while the fourth includes a reduction of external funding. Each scenario will be explained in detail on the following sections.

- *Scenario S1: Baseline scenario*

For this first scenario, some external sources built the historical funding serie for HIV/AIDS in the Dominican Republic. These series are based on COPRESIDA's information memories from 2005 to 2009, the 2008 UNGASS report and the information provided by experts. Consequently, a sample of the behavior from the funding sources is obtained from 2003 until 2008.

Through this historical information, projections were made for each of these funding sources:

Projection of external funding scenarios. Dominican Republic has signed funding aggrements with the Global Fund which amount to 88 USD in six years (2006-2012). In order to

distribute those funds, this nation has an operational plan until 2012. This plan defines the number of contributions as well as the amount of matching funds. The nation committed to cover the full amount of drugs for opportunistic infections, which is assigned to SESPAS, as well as medical testing, assigned to COPRESIDA. The State must cover the full amount of those costs by 2015.

At the same time, the nation has signed an agreement with the United States in order to receive funds from diverse sources, PEPFAR being the main one. According to USAID, these funds should be collected on the following way: 10 million USD in 2009 and 16 million USD per year onwards until 2015. There is no data about if these resources have or not counterpart requirements. The model does not include the matching demands.

The expenditure distribution projected between 2009 and 2015 for each international institution is presented as follows:

Table 9 Expenditure Distribution of International sources according to established agreements (thousands USD)

Years/Source	Global Fund	PEPFAR
2009	6.910	10.000
2010	9.563	16.000
2011	11.284	16.000
2012	12.183	16.000
2013		16.000
2014		16.000
2015		16.000
Total period	39.940	106.000

Source: Fundación Plenitud

In the period 2016-2023, it is assumed that the other external sources, as well as the Global Fund and PEPFAR's resources, grow at the ODA's actual annual growth rate. This growth rate belongs to the rate of Global Development Aid Funds for 1991-2008, which according to the OECD, rises to 2.2 percent.

Projection of internal funding scenarios. The baseline scenario supposes no changes in the internal funding policy. In this sense, the internal funds grow at the same pace of the GDP, that is, very slowly. In 2009, the authorities estimated a rate of 3.5 percent, while in 2010, 5 percent growth is expected. From this year on, the real 5.84 percent annual rate was adopted. According to the Central Bank of this nation, this was the average rate in the Dominican economy for the period 1991-2009.Scenario

- *S2: Changes in sources of funding for ARV*

The second scenario is similar to the previous, but the costs of ARVs become completely covered by the government.

- *Scenario S3: Changes in sources of funding*

It is similar to the previous scenario in which the overall treatment costs becomes covered by the government, with the difference that external financing remains constant from 2015 on because it is the year where they finish the existing contracts with the international institutions

- *Scenario S4: Reduction of external funding*

In this fourth scenario, as in the previous, treatment costs become fully covered by the government, but international resources decreased until 2015 by 5% annually

(e) Gaps calculation

The gap is the result of the difference between the funding demand, which is needed to provide goods and services, and the supply of resources projection, which are defined in every scenario. The projections were made for the period 2008-2023 and the gap analysis for the 2008, 2015 and 2023. The calculation of the gaps results of comparing the demand scenarios (D1 to D4) with the four supply scenarios.

6. Sources of information

Para este estudio se han utilizado las siguientes Sources de información básicas para el desarrollo del modelo:

- World Bank para información Demográfica
- Banco Central de RD
- OECD
- Ministerio de Salud, Programa de SIDA República Dominicana
- Informe MEGAS República Dominicana 2008
- Informe UNGASS República Dominicana 2008
- Recursos necesarios para expandir la respuesta de ayuda en países de bajo –mediano ingreso –RNM, aplicación en República Dominicana.
- Información provista por expertos.

Annex A present additional information on data sources.

7. Results

(a) Population

On the basis of the methodology described in the previous section, the population projection and the expected annual number of people living with HIV/AIDS in the country will be as follows through the year 2023. In the early years, the number of PLWHA will grow at a higher annual rate than the general population.

Table 10 Dominican Republic: Projection of general population and PLWHA, 2008-2023 (million and percent)

Years	Total population (million)	Population growth (annual %)	HIV/AIDS population (Projected)	Annual growth in HIV/ AIDS population (%)	Prevalence of HIV/AIDS (estimated)
2008	10.23		62,000		0,61
2009	10.09	1.34	62,000	6.91	0,61
2010	10.23	1.34	62,000	2.58	0,61
2011	10.36	1.30	61,000	2.49	0,59
2012	10.49	1.26	61,000	2.44	0,58
2013	10.62	1.22	61,000	2.38	0,57
2014	10.74	1.19	61,000	2.33	0,57
2015	10.87	1.15	61,000	2.29	0,56
2016	10.99	1.12	60,000	0.72	0,55
2017	11.11	1.08	60,000	1.08	0,54
2018	11.22	1.04	60,000	1.05	0,53
2019	11.34	1.02	60,000	1.03	0,53
2020	11.45	0.99	60,000	0.99	0,52
2021	11.56	0.95	60,000	-1.96	0,52
2022	11.67	0.93	60,000	0.93	0,51
2023	11.77	0.90	60,000	0.90	0,51

Source: World Bank, Authors

(b) Demand for financing

Below are results from the HIV/AIDS demand projection exercise in each of the three scenarios and for three points in time: 2008, the base year; 2015, the middle year on the target year for the echievement of the MDGs; and 2023, the end year 15 years from the base.

Demand scenario D1 (Base): This scenario assumes that in 2008 the demand for financial resources for HIV/AIDS in the country is equal to the amount of resources actually spent on that year in response to the epidemic. As can be seen from, the projection indicates that the financial demand resources in 2023 for the Dominican Republic will ascend to US$88,0 million, with an increasing tendency to triple the number of 2008. The cost categories that experienced the greater growth are Prevention (256.1%) by effects of the extension on coverage that imply get the country goals , as well as the effect on gradual absorption of the subnotification, that at the moment it’s at 37% and it´s hoped to arrive to a normal level of 30% in 2015.

Table 11 Demand by categories of cost, year bases 2008 and projections 2015 and 2023. (US$ and %)

Cost category	2008		2015		2023		Variatión % 2008 -2023
	US$	%	US$	%	US$	%	
Prevention	7.834.724	25,0	25.790.482	31,5	27.901.581	30,3	256,1
Care and treatment	12.696.120	40,5	27.776.510	34,0	33.724.342	36,6	165,6
Orphans and vulnerable children	24.184	0,1	63.098	0,1	68.352	0,1	182,6
Administration of programs	9.043.374	28,9	23.595.052	28,9	25.560.040	27,7	182,6
Human Resource	758.221	2,4	1.978.274	2,4	2.143.023	2,3	182,6
Social protection and social services	3.455	0,0	9.014	0,0	9.765	0,0	182,6
Favorable environment	524.533	1,7	1.368.558	1,7	1.482.531	1,6	182,6
HIV/AIDS research	446.398	1,4	1.164.696	1,4	1.261.692	1,4	182,6
TOTAL	31.331.008	100,0	81.745.685	100,0	92.151.328	100,0	194,1
Variation % 2008 to 2015 and 2015 to 2023		160,9		12,7			

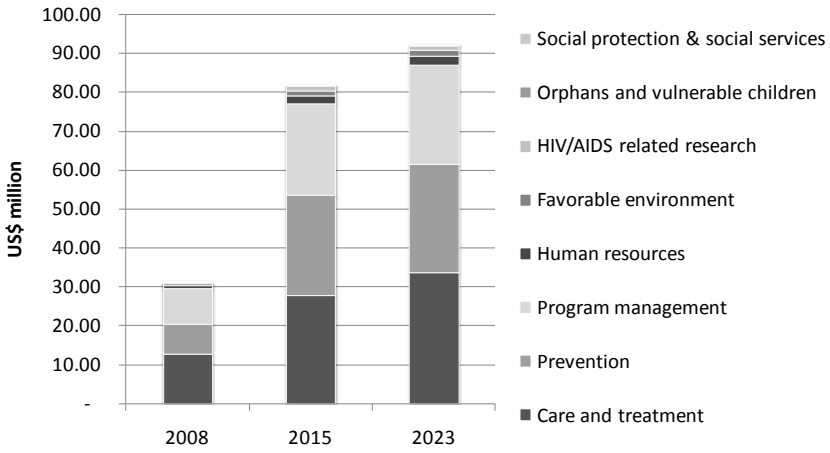
Source: Authors

The greater difference between years 2008 and 2023, is the increase of participation to a 5.3% on Prevention and Careand Treatment decreased to 3.9%. On the other hand, the participation of Management and Administration of Programs lower in a 1.2%. Human resources decrease a 0,1% and Favorable environment a 0,1%. Orphans and Vulnerable Children, Investigation and Social Protection and Social Services stay constant. The Figure 16, shows the projection of the cost between the relevant years.

Scenario D2:

As a result of the projection the total cost to year 2023 is 78.3 million dollars, which means a diminution of 11.5 million dollars compare to the projection of the D1 scenario, where this correction factor is not applied. In this scenario the projection growth between years 2008 and 2023 reaches to a 68.8%, as the growth of the cost between 2008 and 2015 is 47.4%.

Figure 16 Demand scenario D1, years 2008, 2015, 2023



Source: Authors

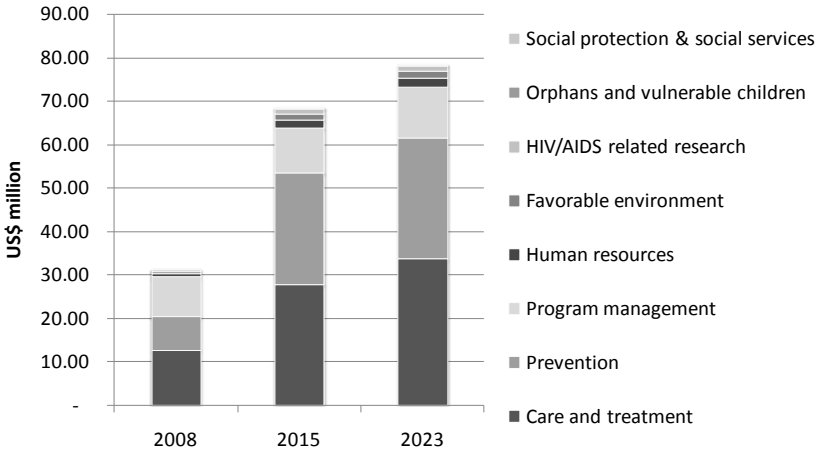
Table 12 Demand according to cost categories, base year 2008 and projections 2015 and 2023, with adjustment of Efficiency by reduction of expenses in management and administration of programs (US$ and %)

Cost category	2008		2015		2023		Variatión % 2008 -2023
	US$	%	US$	%	US$	%	
Prevention	7.834.724	16,9	25.790.482	37,7	27.901.581	35,6	256,1
Care and treatment	27.776.510	59,8	27.776.510	40,6	33.724.342	43,0	21,4
Orphans and vulnerable children	24.184	0,1	63.098	0,1	68.352	0,1	182,6
Administration of programs	9.043.374	19,5	10.261.876	15,0	11.751.404	15,0	29,9
Human Resource	758.221	1,6	1.978.274	2,9	2.143.023	2,7	182,6
Social protection and social services	3.455	0,0	9.014	0,0	9.765	0,0	182,6
Favorable environment	524.533	1,1	1.368.558	2,0	1.482.531	1,9	182,6
HIV/AIDS Investigation	446.398	1,0	1.164.696	1,7	1.261.692	1,6	182,6
TOTAL	46.411.398	100,0	68.412.509	100,0	78.342.692	100,0	68,8
Variation % 2008 to 2015 and 2015 to 2023			47,4		14,5		

Source: Authors

Figure 17 shows the projection of the cost between the relevant years.

Figure 17 Demand scenario D2, years 2008, 2015, 2023



Source: Authors

Scenario D3:The total resources demand to year 2023 is US$69.2, that it is meana diminution of US$9,1 million respect of the previous scenario and US$22,9 million respect of the base scenario on which efficiency adjustments are not applied.

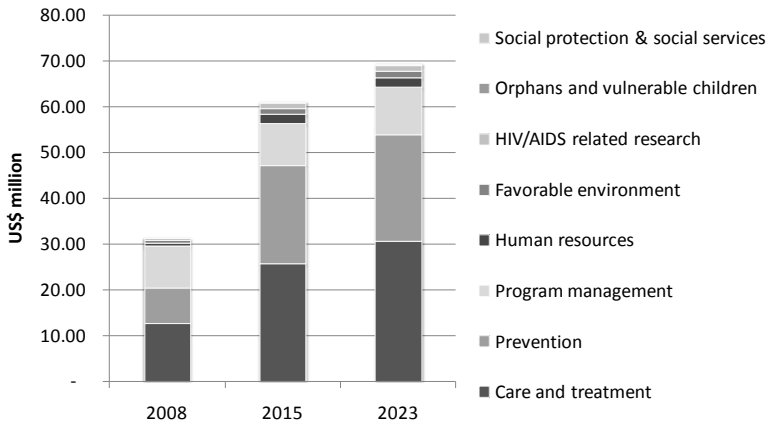
In the D3 Scenario, between the 2008 and 2023 the demand for resources in Prevention it grows in 199,3% and Care and treatment 144.4%. The variations of the rest of the categories of cost do not shows substantial modifications with respect to the previous scenario, with exception of Management and Administration of Programs which increased of 32.5% as a result of its stabilization in 15% of the total cost, which means that grows in a smaller rate that was observed.

Table 13 Demand by categories of cost, year bases 2008 and projections 2015 and 2023, with adjustment of efficiency by reduction of management and administration of programs expenses, plus reduction of ARVand condoms prices (US$ and %)

Cost category	2008		2015		2023		Variation % 2008 -2023
	US$	%	US$	%	US$	%	
Prevention	7.834.724	25,0	21.543.832	35,3	23.306.302	33,7	197,5
Care and treatment	12.696.120	40,5	25.732.573	42,2	30.590.743	44,2	140,9
Orphans and vulnerable children	24.184	0,1	53.965	0,1	58.459	0,1	141,7
Administration of programs	9.043.374	28,9	9.151.773	15,0	10.387.567	15,0	14,9
Human Resource	758.221	2,4	1.978.274	3,2	2.143.023	3,1	182,6
Social protection and social services	3.455	0,0	9.014	0,0	9.765	0,0	182,6
Favorable environment	524.533	1,7	1.368.558	2,2	1.482.531	2,1	182,6
HIV/AIDS Investigation	446.398	1,4	1.164.696	1,9	1.261.692	1,8	182,6
TOTAL	31.331.008	100,0	61.002.685	100,0	69.240.084	100,0	121,0
Variation % 2008 to 2015 and 2015 to 2023			94,7		13,5		

The following figure shows a comparison about expenditure distribution in the year 2008, 2015 and 2023.

Figure 18 Demand scenario D3, years 2008, 2015, 2023



Source: Authors

The net effect for the diminution of prices (without considering the diminution of the administration cost) that is obtained from the D3 scenario compared to the D1 scenario. The result is a diminution of the demand in US$7,7 million in 2023 compare to 2008. It´s originate in US$4,5 million in Prevention by effects of lower the price of purchase in condoms, and US$3,1 million in Care and Treatment. Within this cost category, the diminution of the price of the reagents explains US$0.4% million dollars and the ARV are responsible for the loss in US$2,7 million which has a similar distribution between the therapies of 1era line and 2°, 3° line and rescues.

Table 14 shows a summary of the demand projection, year 2023, according to the three described scenarios.The adjustments applied in the D2 and D3 scenario, means a reduction for year 2023 of a 15% and 24.9% respectively compared to the demand scenario 1 (base). This global reduction includes a principal reduction of a 59.4% in cost categorie “management and administration of programs. See Table 14.

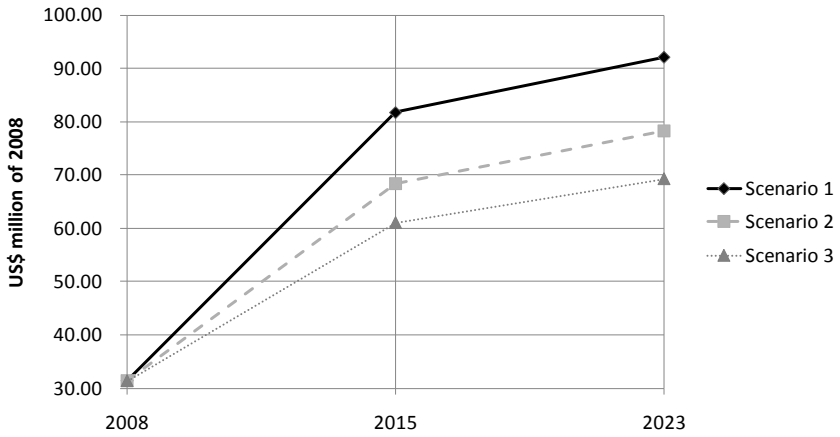
Table 14 Demand projected to year 2023 in 3 scenarios, by cost category (US$)

Cost category	D1 Scenario (Base)		D2 Scenario		D3 Scenario		Variation % D1-D3
	US$	%	US$	%	US$	%	
Prevention	27.901.581	30,3	27.901.581	35,6	23.306.302	33,7	-16,5
Care and treatment	33.724.342	36,6	33.724.342	43,0	30.590.743	44,2	-9,3
Orphans and vulnerable children	68.352	0,1	68.352	0,1	58.459	0,1	-14,5
Administration of programs	25.560.040	27,7	11.751.404	15,0	10.387.567	15,0	-59,4
Human Resource	2.143.023	2,3	2.143.023	2,7	2.143.023	3,1	0,0
Social protection and social services	9.765	0,0	9.765	0,0	9.765	0,0	0,0
Enabling environment	1.482.531	1,6	1.482.531	1,9	1.482.531	2,1	0,0
HIV/AIDS research	1.261.692	1,4	1.261.692	1,6	1.261.692	1,8	0,0
Total	92.151.328	100,0	78.342.692	100,0	69.240.084	100,0	-24,9
Variation (%)			-15,0		-11,6		

Source: Authors

The following figure shows the growth of the cost at the 3 relevant years in the S1, S2 and S·scenarios.

Figure 19 Dominican Republic: Comparison of demand scenarios. 2008, 2015, 2023



Source: Authors.

(c) Supply projections

As it was indicated in the preceding chapter, from the financing supply in year 2008, four different scenarios were developed (Scenario S1 to S4) to project the annual supply on 2009 to 2023. Thosewere developed starting in 2008 and the projections for years 2015 to 2023.

- *Scenario S1: Base*

The assumption is that financing grows as ODA. The result of this scenario is that funding grows from $ 31.3 million to U.S. $ 77.8 million, ie 148.4%. The composition of financing in terms of national (public and private) and international resources not experience significant changes, since both are located at rates close to 50%. An exception of that trend is the situation at year 2015 in which external financing reaches its highest expression with a resulting 54.1% of the commitments made by international agencies. In this scenario there is no additional fiscal effort at the base year, but experienced an increase of public resources from 25.1% in 2008 to 28.9% in 2023 as a result of increased government spending must do in return for external

resources.A fraction of government spending is due to the commintment of external aid for matching funds.

It's important to ask, if the countries would have spent those resources on AIDS if there is no obligation required by international agencies.

The following table shows the resources suplly for the years 2008, 2015 and 2023 in US$ million and the percentage of distribution for each year, plus the percentage change between 2008 and 2023 for each source of funding, and in total between the years 2008 and 2015 and between 2015 and 2023.

Table 15 Scenario S1 Supply of resources by type of funds 2008 and projections 2015 y 2023. (US$ y %)

Sources of funding	2008		2015		2023		Variation % 2008 -2023
	US$	%	US$	%	US$	%	
Internal funds	**16,062**	**51.3**	**26,132**	**45.9**	**41,151**	**52.9**	**156.2**
Public sources	7,860	25.1	14,294	25.1	22,509	28.9	186.4
• SESPAS	3,677	11.7	5,308	9.3	8,358	10.7	127.3
• COPRESIDA	4,132	13.2	8,913	15.6	14,036	18.0	239.7
• Other	51	0.2	73	0.1	115	0.1	127.3
Private sources	**8,202**	**26.2**	**11,838**	**20.8**	**18,641**	**23.9**	**127.3**
• Households	8,024	25.6	11,582	20.3	18,238	23.4	127.3
• Other private sources	177	0.6	256	0.4	403	0.5	127.3
External sources	**15,269**	**48.7**	**30,828**	**54.1**	**36,691**	**47.1**	**140.3**
• World Fund	12,621	40.3	13,005	22.8	15,478	19.9	22.6
• US/PEPFAR	1,384	4.4	16,352	28.7	19,462	25.0	1305.8
• Other	1,264	4.0	1,472	2.6	1,751	2.2	38.6
Total	31,331	100.0	56,961	100.0	77,842	100.0	148.4
Variation (percent)			81.8		36.7		

Source: Authors.

- *Scenario S2*

The second stage of financing is similar to the previous, but the costs of ARVs become completely covered by the government which results in an increase of 293.2% of the supply from domestic public in the period. The funding expected in this scenario at 2023 is U.S. $ 86.2 million, an increase of 10.7% over the previous scenario and an increase of 175.3% over the previous year. See Table 16.

Table 16 Scenario S.2. Supply of resources by type of funding at 2008 and projections 2015 y 2023. (US$ y %)

Sources de financiamiento	2008		2015		2023		Variación % 2008 -2023
	US$	%	US$	%	US$	%	
Sources Internas	16.062	51,3	28.007	47,6	49.550	57,5	208,5
Sources públicas	7.860	25,1	16.169	27,5	30.909	35,8	293,2
*** SESPAS**	3.677	11,7	5.308	9,0	8.358	9,7	127,3
*** COPRESIDA**	4.132	13,2	5.308	9,0	14.036	16,3	239,7
*** Otras Sources públicas**	51	0,2	5.554	9,4	8.515	9,9	16658,1
Sources Privadas	8.202	26,2	11.838	20,1	18.641	21,6	127,3
*** Hogares**	8.024	25,6	11.582	19,7	18.238	21,1	127,3
*** Otras Sources privadas**	177	0,6	256	0,4	403	0,5	127,3
Sources Externas	15.269	48,7	30.828	52,4	36.691	42,5	140,3
*** Fondo Mundial**	12.621	40,3	13.005	22,1	15.478	17,9	22,6
*** US / PEPFAR**	1.384	4,4	16.352	27,8	19.462	22,6	1305,8
*** Otras Sources externas**	1.264	4,0	1.472	2,5	1.751	2,0	38,6
TOTAL	31.331	100,0	58.836	100,0	86.241	100,0	175,3
Variación % 2008 a 2015; 2015 a 2023			87,8		46,6		

Source: Authors

- *Scenario S3*

Funding is projected to year 2023 in an amount of $ 80.3 million which means an increase in the supply of 156.5% over 2008. This decline in external financing is US$ 6 million, total that decreases the supply over the previous scenario.

Table 17 Sscenario S.3. Supply of resources by type of funding, 2008 and projections 2015 , 2023. (US$ and %)

Sources of funding	2008		2015		2023		Variation % 2008 -2023
	US$	%	US$	%	US$	%	
Internal funds	16.062	51,3	31.613	50,9	49.550	61,7	208,5
Public funds	7.860	25,1	19.775	31,8	30.909	38,5	293,2
* SESPAS	3.677	11,7	5.308	8,5	8.358	10,4	127,3
* COPRESIDA	4.132	13,2	8.913	14,4	14.036	17,5	239,7
* Others public Sources	51	0,2	5.554	8,9	8.515	10,6	16658,1
Private funds	8.202	26,2	11.838	19,1	18.641	23,2	127,3
* Households	8.024	25,6	11.582	18,7	18.238	22,7	127,3
* Ohers private Sources	177	0,6	256	0,4	403	0,5	127,3
External funds	15.269	48,7	30.476	49,1	30.812	38,3	101,8
* Global Fund	12.621	40,3	13.005	20,9	13.005	16,2	3,0
* US / PEPFAR	1.384	4,4	16.000	25,8	16.000	19,9	1055,7
* Others external sources	1.264	4,0	1.472	2,4	1.807	2,2	43,0
TOTAL	**31.331**	**100,0**	**62.090**	**100,0**	**80.362**	**100,0**	**156,5**
Variation % 2008 to 2015; 2015 to 2023			98,2		29,4		

Source: Authors.

- *Scenario S4*

In this fourth scenario, as in the previous, treatment costs become fully covered by the government, but international resources decreased until 2015 by 5% annually. By 2023 this scenario has a spending of U.S. $ 69.2 million and an increase of 122.7% over 2008. As a result, domestic financing reached more relevant (71.0%) and within this, public sources accounts are a 44% of total resources. For more details see Table 18.

Table 18 Scenario S.4. Supply of resources by type of funding, 2008 and projections 2015 , 2023. (US$ and %)

	2008		2015		2023		Variation % 2008 -2023
Funding Sources	US$	%	US$	%	US$	%	
Internal Sources	16.062	51,3	31.613	50,9	49.550	71,0	208,5
Sources públicas	7.860	25,1	19.775	31,8	30.909	44,3	293,2
* SESPAS	3.677	11,7	5.308	8,5	8.358	12,0	127,3
* COPRESIDA	4.132	13,2	8.913	14,4	14.036	20,1	239,7
* Others public Sources	51	0,2	5.554	8,9	8.515	12,2	16658,1
Private Sources	8.202	26,2	11.838	19,1	18.641	26,7	127,3
* Household	8.024	25,6	11.582	18,7	18.238	26,1	127,3
* Others private Sources	177	0,6	256	0,4	403	0,6	127,3
External Sources	**15.269**	**48,7**	**30.476**	**49,1**	**20.219**	**29,0**	**32,4**
* global Fund	12.621	40,3	13.005	20,9	8.628	12,4	-31,6
* US / PEPFAR	1.384	4,4	16.000	25,8	10.615	15,2	666,7
* Others external Sources externas	1.264	4,0	1.472	2,4	976	1,4	-22,7
TOTAL	31.331	100,0	62.090	100,0	69.769	100,0	122,7
Variation % 2008 to 2015; 2015 to 2023			98,2		12,4		

Source: Authors.

It should be noted that in almost all scenarios analyzed, the greatest effort in the provision of resources reach its peak in 2015, after which it begins to decline due to decreasing behavior from external sources.

The following table provides a summary of the supply scenarios to 2023. As you can see, the changes compared with O1 scenario indicate that the highest increase supply would result in O2 when the government takes care of antiviral therapy with no price adjustments in the ARV. This is the scenario with the higher supply with an amount of U.S. $ 86.2 million. Next in importance is the scenario O5, where external funds not experience diminution compare with scenario O5. The largest decrease in supply (13.9%) is presented in O7 scenario where to price decrease in treatment adds a 5% annual reduction since 2015, from external sources. The following is a summary table of the 7 scenarios.

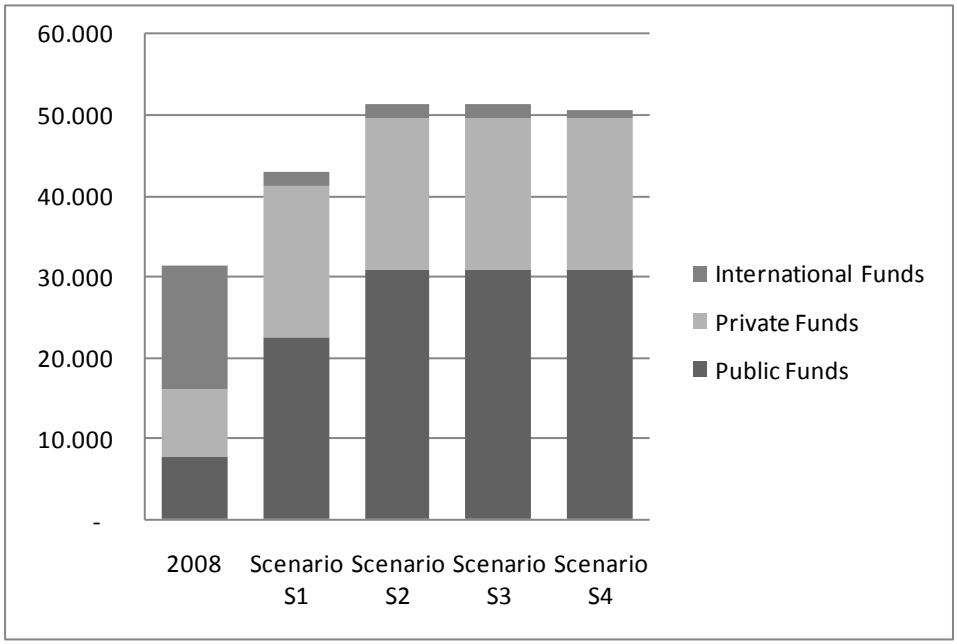
Table 19 Summary of scenarios of supply by type of funds, 2023. (US$ y %)

Sources of financing	Internal funds		External funds		Total		Variation rel. Esc. O.1	
	US$	%	US$	%	US$	%	US$	
Scenario O.1	41.151	52,9	36.691	47,1	77.842	100,0	0,0	0,0
Scenario O.2	49.550	57,5	36.691	42,5	86.241	100,0	8.400	10,8
Scenario O.3	49.550	61,7	30.812	38,3	80.362	100,0	2.521	3,2
Scenario O.4	49.550	71,0	20.219	29,0	69.769	100,0	-8.073	-10,4

Source: Authors.

Finally, as shown in Figure 10, as a result of the 7 scenarios we conclude that its need to increase participation in domestic spending and reduce international participation.

Figure 20 Dominican Republic: Suppy of financing for HIV/AIDS under different scenarios, 2008 (Base Scenario) and 2023 (US$ million)



Source: Authors.

Finally, for more details on the results of the scenarios see Appendix F.

(d) Gap analysis

Based on the projections of demand and supply financing and there different scenarios the calculation is made of financing gaps for all years of the estimation. The following table summarizes the outcomes. No one supply scenario can get base demand scenario. On the other side the supply scenario 3 gott all the demand scenarios.

Table 20 Gap analysis between demand and supply scenarios. Year 2023 DR (US$ millions)

Year 2023	Supply 1	Supply 2	Supply 3	Supply 4
Demand 1	-14,3	-5,9	-11,7	-22,3
Demand 2	-0,5	7,9	2,1	-8,5
Demand 3	8,6	17	11,2	0,6
Demand 4	-8	0,4	-5,4	-16

The calculation of the gaps results of comparing the demand scenarios (with the four scenarios of resources supply. Below are tables with scenarios and gaps in selected years with the trend graphs for all years of the projection. In Annex E shows the results by year.

- *Scenario D1*

The results indicate that in the D1 scenario, which does not include adjustments to the demand for efficiency factors, negative gaps occur in all years and all supply scenarios. The largest negative gap of $ 21.2 million was in the projection for 2023 by applying the supply scenario O4, because this scenario assumes a decrease in external sources of financing offer. In the same year negative gap occurs on a smaller scale (U.S. $ 4 million) in O2 scenario where ARVs are covered by the government and therefore increases the supply.

It should be noted that in 2015 high negative gaps are observed in all stages of supply, because it is the year in which the country has set important goals to increase coverage in response to HIV/AIDS, which is expressed in a growth in demand financing. From that year until 2023 the demand grows only in terms of natural population growth. The highest negative gap was in 2015 (U.S. $ 19.2 million) produced in the O1 scenario where no changes in government policies on HIV/AIDS funding were experimented and external funds grow according to the ODA.

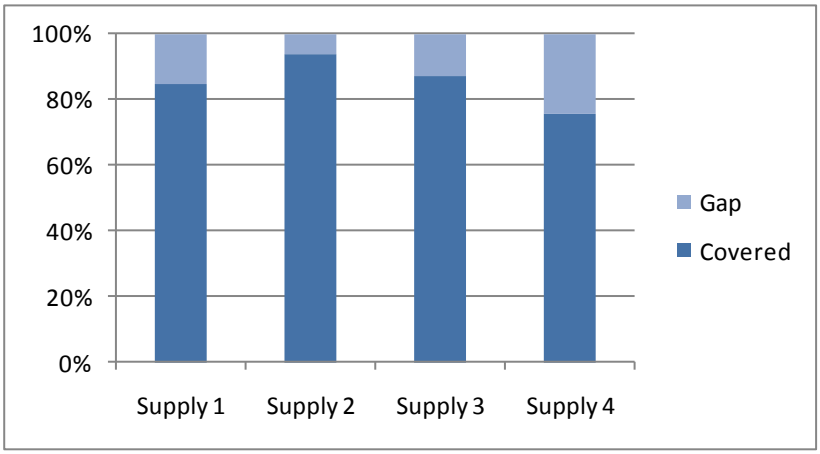
Table 21 Gap in Scenario D1, US$ million

SCENARIO D1	2009	2015	2023
Scenario S1	0	-24,8	-14,3
Scenario S2	0	-22,9	-5,9
Scenario S3	0	-19,6	-11,7
Scenario S4	0	-19,6	-22,3

Source: Authors

A comparison between the baseline demand scenario (D1) and the supplies scenarios S1, S2, S3 and S4 by the year 2023, is presented in the following figure. This figure shows that no supply scenario covers the needs projected and there is always a funding gap left to cover for all cases.

Figure 21 Gap analysis -2023. Scenarios D1 vs S1, S2, S3, S4.



Source: Authors.

- *Scenario D2*

In this scenario, the demand is adjusted to the efficiency be reducing the programs management costs. If the gaps are analyzed togheter with the supplies scenarios for 2023, it is clear that the negative gap is lower than that of the demand scenario D1. The largest gap for that same year is S4 ($ 8.5 million USD).

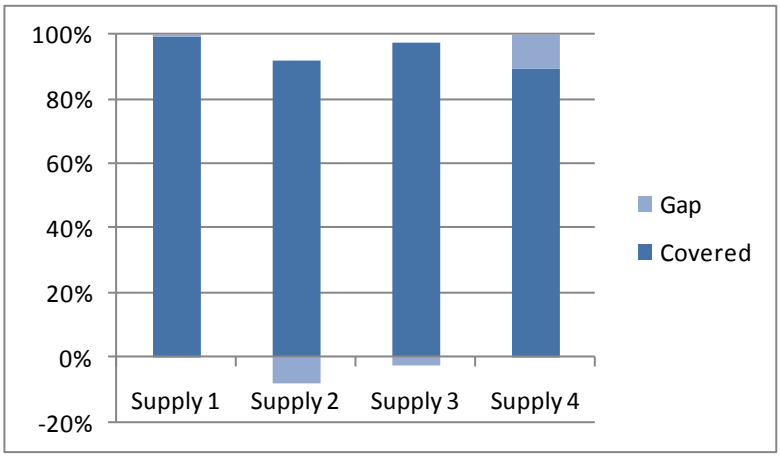
Table 22 Gaps related with demand scenario D2

SCENARIO D2	2009	2015	2023
Scenario S1	0	-11,5	-0,5
Scenario S2	0	-9,6	7,9
Scenario S3	0	-6,3	2,1
Scenario S4	0	-6,3	-8,5

Source: Authors.

A comparison between demand scenario D2 and all supply scenarios is presented in the following figure.

Figure 22 Gap analysis 2008-2023. Scenarios D2 and all supply scenarios



Source: Authors.

- *Scenario D3*

Apart from efficiency adjustment of the previous scenario, this scenario includes price adjustments of ARV drugs, reagents and condoms, with all suplly scenarios covering all needs by 2023. In this scenario all gaps are positive, namely, the supply of resources surpasses that of the demand.

By 2015 the only negative gaps are supply scenarios S1 and S2.

Following table summarizes the results of the model:

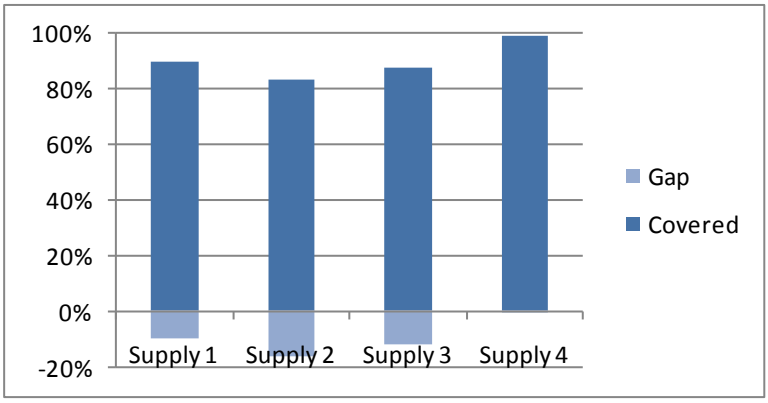
Table 23 Gap analysis in Demand scenario D3. US$ million

SCENARIO D3	2009	2015	2023
Scenario S1	0	-4,1	8,6
Scenario S2	0	-2,2	17
Scenario S3	0	1,1	11,2
Scenario S4	0	1,1	0,6

Source: Authors.

A comparison between demand scenario D3 and all supply scenarios is presented in the following figure.

Figure 23 Gap analysis 2008-2023. Scenario D3 vs S1, S2, S3 and S4



Source: Authors.

- *Scenario D4*

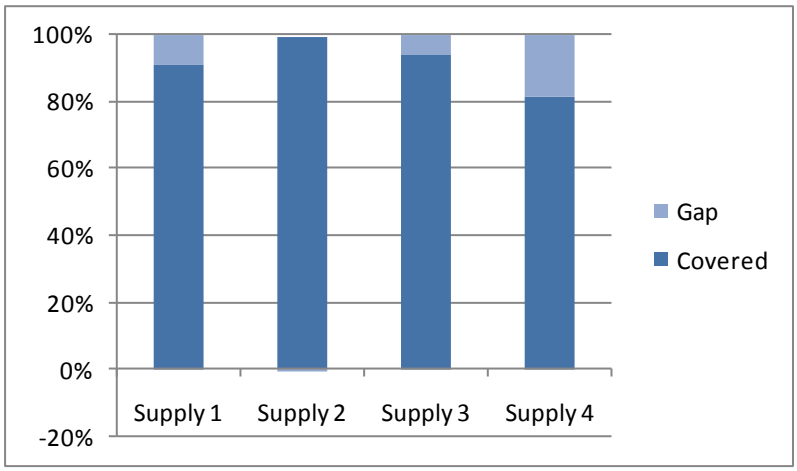
In this scenario, the efficiency adjustment is based on the prices adjustment of ARVs and condoms. Only supply scenario S2 and S3 can cover the needs for resources, while the others have a negative gap. All supply scenarios show a negative gap in the year 2015.

Table 24 Gap analysis in Demand scenario D4. US$ million

SCENARIO D4	2009	2015	2023
Scenario S1	0	-19,8	-8
Scenario S2	0	-17,9	0,4
Scenario S3	0	-14,6	-5,4
Scenario S4	0	-14,6	-16

A comparison between demand scenario D2 and all supply scenarios is presented in the following figure.

Figure 24 Gap analysis 2008-2023. Scenarios D4 and all supply scenarios



Source: Authors.

8. Conclusions

This study constructed a model to project the future demand for and supply of funding for HIV/AIDS'related interventions and to determine whether there will funding gaps. The demand for funding is expected to grow to enable the Dominican Republic to face the challenge of improving the coverage for preventive and curative actions for HIV/AIDS in order to meet the MDGs. An expected drop in external funding further complicates this challenge.

The study shows that unless important changes arise in the funding situation for HIV/AIDS, the Dominican Republic will find itself with insufficient resources to meet future demand. The funding gap could be reduced in part if the country's HIV/AIDS program improved its efficiency, by reducing management costs to bring them to international levels. But the reduction in the gap will not suffice, and therefore an additional reduction in spending will be required. The authors projected a drop in the prices of ARVs and condoms, consistent with international trends. This additional measure, if feasible, would bring the demand and supply to a matching point.

The tasks ahead are first to validate these projections and assumptions during a policy workshop to be held in the next few weeks in the Dominican Republic and, second, to define feasible implementation strategies to fill gaps through a combination of efficiency gains and fund raising.

9. Annexes

(a) Annex A: Population

Table 25 Prevalence and spending on HIV/AIDS in selected countries of LAC region

Region/Reporting Country	Region (LA=Latin America; C=Caribbean)	Year of the expenditure	Total reported domestic public and international expenditure (USD million)a	Per capita GNI 2007 (GNI, Atlas method)b	Total GNI 2007 (USD million, Atlas method)b	Total HIV/AIDS spending as % of GNI	Prevalence of HIV/AIDS, % population 15-49b
Dominican Republic	C	2007	13,74	4.070	43.207	0,032	1,1
Haiti	C	2006	70,28	520	5.039	1,395	2,2
Jamaica	C	2007	14,75	4.420	11.824	0,125	1,6
Saint Lucia	C	2007	0,77	5.310	893	0,086	0,6
Trinidad and Tobago	C	2006	12,15	14.480	19.303	0,063	1,5
Argentina	LA	2006	149,53	6.040	238.733	0,063	0,5
Bolivia	LA	2007	3,18	1.220	11.625	0,027	0,2
Brazil	LA	2006	565,19	6.060	1.151.265	0,049	0,6
Chile	LA	2005	54,07	8.160	135.368	0,040	0,3
Colombia	LA	2006	97,64	4.100	180.412	0,054	0,6
Costa Rica	LA	2006	11,27	5.520	24.650	0,046	0,4
Ecuador	LA	2007	7,47	3.150	42.058	0,018	0,3
El Salvador	LA	2006	33,13	3.200	19.552	0,169	0,8
Guatemala	LA	2006	18,96	2.470	32.954	0,058	0,8
Honduras	LA	2006	14,35	1.590	11.310	0,127	0,7
Mexico	LA	2005	176,05	9.400	989.521	0,018	0,3
Panama	LA	2006	14,16	5.500	18.384	0,077	1,0
Paraguay	LA	2007	2,33	1.710	10.462	0,022	0,6
Peru	LA	2007	28,01	3.340	95.288	0,029	0,5
Uruguay	LA	2006	5,73	6.620	22.017	0,026	0,6

Sources:

a. UNAIDS at www.unaids.org
b. World Bank at www.worldbank.org.

Table 26 Dominican Republic Population 2000-201

DEMOGRAPHY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Population, total (million)	8,74	8,88	9,03	9,17	9,32	9,46	9,61	9,72	9,83	10,09	10,23
Population growth (annual %)		1,60	1,69	1,55	1,64	1,50	1,59	1,14	1,13	2,64	1,34
Male Population (million)	4,45	4,45	4,59	4,66	4,73	4,80	4,86	4,93	5,00	5,07	5,14
Female Population (million)	4,38	4,46	4,53	4,60	4,67	4,74	4,81	4,88	4,95	5,02	5,09

Source: World Bank.

Table 27 Dominican Republic Population 2011-2023

DEMOGRAPHY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Population, total (million)	10,36	10,49	10,62	10,74	10,87	10,99	11,11	11,22	11,34	11,45	11,56	11,67	11,77
Population growth (annual %)	1,30	1,26	1,22	1,19	1,15	1,12	1,08	1,04	1,02	0,99	0,95	0,93	0,90
Male Population (million)	5,20	5,26	5,33	5,39	5,45	5,51	5,56	5,62	5,68	5,73	5,78	5,83	5,88
Female Population (million)	5,16	5,23	5,29	5,36	5,42	5,48	5,54	5,61	5,66	5,72	5,78	5,84	5,89

Source: World Bank.

(b) Annex B: Sources of information

- World Bank (demographic information)
- Dominican Republic Central Bank
- OECD
- Ministry of Health, AIDS Program
- Dominican Republic MEGAS Report, 2008
- Dominican Republic UNGASS Report 2008
- Resources necessary to expand the aid response in low and middle income countries – Resource Needs Model, application in the Dominican Republic.
- Information provided by experts.
- "AIDS expending measure in Dominican Republic, 2008¨ (MEGAS)

(c) Annex D: Population afflicted by HIV/AIDS in the Dominican Republic

Table 28 Population HIV / AIDS Dominican Republic, 2000-2008

DEMOGRAPHY	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of Reported cases							19,291	21,012	22,925
Estimate HIV/AIDS Population	65,315	65,364	64,878	64,170	63,356	62,546	61,800	61,717	62,009
AIDS deaths in adults and children	3,935	4,360	4,717	4,972	4,967	4,772	4,369	3,930	3,814
Prevalence of estimated HIV/AIDS population (%)	0.75	0.74	0.72	0.70	0.68	0.66	0.64	0.63	0.63
Case fatality rate over reported cases (%)							22.65	18.70	16.64

Source: Informe Estimaciones Nacionales, República Dominicana, 2007.

(d) Annex E: Comparative prevalence rate of spending and countries of the region with similar income

Table 29 Expenditure Management and prevalence in selected countries from Latin America and the Caribbean

Country	HIV/AIDS programs management expenditure as % of total program spending	HIV/AIDS prevalence
Dominican Republic	26.60%	0.63%
Guatemala	15.25%	0.43%
Mexico	7.00%	0.19%
Ecuador	5.00%	0.19%
Argentina	4.60%	0.30%
Brazil	4.50%	0.38%
Peru	3.50%	0.26%
Uruguay	3.40%	0.30%
Panama	0.90%	0.59%
Colombia	0.60%	0.38%
Costa Rica	0.60%	0.21%
Cuba	0.40%	0.06%

Sources: UNAIDS and World Bank.

(e) Annex F: Sources of HIV/AIDS financing in the Dominican Republic, 2003-2008

Table 30 Distribution by sources of financing expenditure 2203-2008 (US$ million and percent)

	2003	2004	2005	2006	2007	2008	Growth 2003–2008
Internal sources	7,509	7,788	10,885	17,585	17,840	16,062	113. 9%
Public sources	*5,450*	*5,515*	*7,060*	*11,775*	*13,063*	*7,860*	*44.2%*
SESPAS	1,651	1,293	2,616	4,825	3,812	3,677	122.8%
DIGECITSS	753	302	948	2,291	1,351	794	5.5%
Other	898	991	1,668	2,533	2,461	2,883	221.0%
COPRESIDA	3,744	4,160	4,341	6,794	9,099	4,132	10.4%
Government subsidies	128	92	314	226	347	159	24.0%
Global Fund counterpart			-	-	-	-	0.0%
World Bank counterpart	439	1,012	819	866	673	863	96.7%
World Bank loan	3,176	3,056	3,208	5,701	8,079	3,110	-2.1%
Other public sources	55	61	103	156	152	51	-8.3%
Private sources	*2,060*	*2,273*	*3,825*	*5,810*	*4,778*	*8,202*	*298.2%*
Households	1,740	1,920	3,231	4,908	4,767	8,024	361.2%
Other	320	353	594	902	10	177	-44.5%
External sources	7,166	7,897	12,346	17,937	19,617	15,269	113.1%
World Fund	-	199	4,250	8,710	10,924	12,621	0.0%
US/PEPFAR	5,500	6,000	5,258	6,538	5,538	1,384	-74.8%
Other	1,666	1,698	2,838	2,689	3,155	1,264	-24.2%
Total funds	14,676	15,685	23,231	35,522	37,457	31,331	113.5%

Source: Fundación Plenitud, República Dominicana.

(f) Annex G: Gap analysis 2009-2023

Table 31 Gap analysis, 2009-2023

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Demand scenario: Base	35.6	40.8	46.9	53.8	61.7	70.9	81.7	83.1	84.6	86.1	87.7	89.6	90.5	91.3	92.2
Supply projections															
Scenario S1: External funding increases according to ODA. No changes in internal funding policy	31.4	42.2	45.1	48.1	51.4	53.9	57.0	59.2	61.5	63.9	66.4	69.1	71.9	74.8	77.8
Gap	-4.2	1.3	-1.7	-5.6	-10.2	-17.0	-24.8	-23.9	-23.1	-22.2	-21.2	-20.6	-18.6	-16.5	-14.3
Scenario S2: External funding increases according to ODA. ARVs covered by government	31.4	42.2	45.1	49.1	53.6	57.6	62.4	65.1	67.8	70.7	73.8	77.3	80.1	83.1	86.2
Gap	-4.2	1.3	-1.7	-4.7	-8.0	-13.3	-19.3	-18.0	-16.7	-15.4	-13.9	-12.4	-10.4	-8.2	-5.9
Scenario S3: External funding remains constant. ARVs covered by government	31.4	42.2	45.1	49.1	53.6	57.6	62.1	64.0	66.1	68.3	70.6	73.4	75.5	77.7	80.0
Gap	-4.2	1.3	-1.7	-4.7	-8.0	-13.3	-19.7	-19.0	-18.5	-17.8	-17.0	-16.3	-15.0	-13.6	-12.1
Scenario S4: External funding drops. ARVs covered by government	31.4	42.2	45.1	49.1	53.6	57.6	62.1	62.5	63.1	64.0	65.0	66.5	67.4	68.5	69.8
Gap	-4.2	1.3	-1.7	-4.7	-8.0	-13.3	-19.7	-20.6	-21.4	-22.1	-22.7	-23.2	-23.1	-22.8	-22.4
Demand Scenario: Efficiency gains (D2)	34.4	38.3	42.8	47.8	53.6	60.4	68.4	69.7	71.1	72.6	74.2	76.2	76.9	77.6	78.3
Supply projections															
Scenario S1: External funding increases according to ODA. No changes in internal funding policy	31.4	42.2	45.1	48.1	51.4	53.9	57.0	59.2	61.5	63.9	66.4	69.1	71.9	74.8	77.8
Gap	-3.0	3.9	2.4	0.3	-2.2	-6.5	-11.5	-10.5	-9.6	-8.7	-7.8	-7.1	-5.1	-2.9	-0.5
Scenario S2: External funding increases according to ODA. ARVs covered by government	31.4	42.2	45.1	49.1	53.6	57.6	62.4	65.1	67.8	70.7	73.8	77.3	80.1	83.1	86.2
Gap	-3.0	3.9	2.4	1.3	0.0	-2.8	-6.0	-4.6	-3.3	-1.9	-0.4	1.1	3.2	5.5	7.9
Scenario S3: External funding remains constant. ARVs covered by government	31.4	42.2	45.1	49.1	53.6	57.6	62.1	64.0	66.1	68.3	70.6	73.4	75.5	77.7	80.0
Gap	-3.0	3.9	2.4	1.3	0.0	-2.8	-6.3	-5.6	-5.0	-4.3	-3.5	-2.8	-1.5	0.0	1.7
Scenario S4: External funding drops. ARVs covered by government	31.4	42.2	45.1	49.1	53.6	57.6	62.1	62.5	63.1	64.0	65.0	66.5	67.4	68.5	69.8
Gap	-3.0	3.9	2.4	1.3	0.0	-2.8	-6.3	-7.2	-8.0	-8.7	-9.2	-9.7	-9.5	-9.2	-8.6
Demand Scenario: Efficiency gains plus price reductions (D3)	33.8	37.0	40.6	44.6	49.2	54.6	61.0	62.0	63.2	64.5	65.7	67.4	68.0	68.6	69.2
Supply projections															
Scenario S1: External funding increases according to ODA. No changes in internal funding policy	31.4	42.2	45.1	48.1	51.4	53.9	57.0	59.2	61.5	63.9	66.4	69.1	71.9	74.8	77.8
Gap	-2.4	5.2	4.6	3.5	2.2	-0.7	-4.0	-2.9	-1.7	-0.6	0.7	1.7	3.9	6.2	8.6

(g) Annex H: Dominican Republic –Projected demand and supply scenarios, 2008-2023

Table 32 Scenario D1, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Prevention	Communication for social and behavioral change	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1,4
	Community Mobilization	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0,5
	Counseling for voluntary testing	0.5	0.6	0.7	0.9	1.1	1.3	1.6	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2,1
	Risk reduction for vulnerable population	0.7	0.9	1.1	1.4	1.8	2.3	3.0	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
	Prevention for school age children	0.1	0.1	0.1	0.2	0.4	0.7	1.1	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1,9
	Prevention for children without schooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Prevention of HIV/AIDS transmission for PLWHA	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Prevention programs for comercial sex workers and their clients	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
	Prevention programs for men who have sex with men	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Program for the prevention of health damage for drug addicts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Program for prevention in the workplace	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0,3
	Procurement of male condoms in public and comercial sectors	2.8	3.3	3.8	4.3	5.0	5.8	6.6	7.6	7.7	7.8	7.9	8.0	8.1	8.1	8.2	8,3
	Prevention, diagnosis and treatment of sexually transmitted diseases	0.9	1.1	1.3	1.5	1.8	2.1	2.5	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3,2
	Prevention of vertical mother to child transmission	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1,6
	Other prevention	0.8	1.0	1.2	1.4	1.6	1.9	2.3	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3,0
	Total	7,8	9.2	10.8	12.7	15.0	17.9	21.4	25.8	26.0	26.3	26.6	26.9	27.1	27.4	27.7	27.9
Care and treatment	Ambulatory care	10.5	11.6	13.1	14.8	16.6	18.5	20.6	23.0	23.7	24.5	25.4	26.4	27.7	28.0	28.3	28,5
	Without ARV treatment	6.6	7.4	8.3	9.3	10.4	11.7	13.1	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15,9
	Reactives for people with ARV treatment	1.4	1.4	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.4	3.6	4.0	4.1	4.1	4,2
	ARV treatment	2.6	2.8	3.2	3.7	4.1	4.6	5.0	5.6	6.0	6.4	6.9	7.5	8.3	8.4	8.4	8,5
	First line	1.9	2.0	2.3	2.6	2.9	3.1	3.3	3.6	3.8	4.1	4.4	4.8	5.3	5.4	5.4	5,5
	Second and third rescue	0.7	0.7	0.9	1.1	1.3	1.5	1.7	2.0	2.1	2.3	2.5	2.7	3.0	3.0	3.0	3,1
	Hospital care	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1,1
	Other care	1.7	1.9	2.1	2.4	2.7	3.0	3.4	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
	Total	12,7	14.0	15.9	17.9	20.0	22.3	24.9	27.8	28.5	29.4	30.4	31.4	32.8	33.1	33.4	33.7
Orphans and vulnerable children	Education for orphans and vulnerable children (OVC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Support to household and family for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Community support for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0

Table 32 Scenario D1, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Institutional care for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other OVC services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Total	0,0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Program management	Program planning, coordination, and management	4.7	5.3	6.1	7.0	8.0	9.2	10.6	12.1	12.3	12.4	12.5	12.7	12.8	12.9	13.0	13,1
	Management and transaction costs associated with handling and disbursement of funds	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0,6
	Surveillance and evaluation	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0,9
	Operations research	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Serosurveillance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Pharmaceutical procurement systems	0.8	0.9	1.0	1.2	1.4	1.5	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2,2
	Information technology	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0,3
	Patient follow up	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Infrastructure construction and improvement	1.0	1.1	1.3	1.4	1.6	1.9	2.2	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2,7
	Other management	1.0	1.1	1.3	1.5	1.7	1.9	2.2	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2,8
	Management of programs s.c.o (?)	1.0	1.1	1.3	1.5	1.7	1.9	2.2	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2,7
	Total	9,0	10.4	11.9	13.6	15.6	17.9	20.6	23.6	23.9	24.1	24.4	24.6	24.9	25.1	25.3	25.6
Human resources	Monetary incentives for human resources	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Training	0.6	0.7	0.9	1.0	1.1	1.3	1.5	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1,8
	Other spending on human resources	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
	Total	0,8	0.9	1.0	1.1	1.3	1.5	1.7	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1
Social protection and social services	Social protection through monetary benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Social protection through in-kind benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other social protection activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Total	0,0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Enabling environment	Sensitization	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0,7
	Human rights programs	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	HIV/AIDS-specific institutional development	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0,7
	Women oriented HIV/AIDS programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other enabling environment activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Enabling environment s.c.o. (?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Total	0,5	0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
HIV/AIDS related research	Social sciences research	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Other HIV/AIDS research activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Total	0,4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
Grand total		31,3	35.6	40.8	46.9	53.8	61.7	70.9	81.7	83.1	84.6	86.1	87.7	89.6	90.5	91.3	92.2

Table 33 Scenario D2, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Prevention	Communication for social and behavioral change	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1,4
	Community Mobilization	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0,5
	Counseling for voluntary testing	0.5	0.6	0.7	0.9	1.1	1.3	1.6	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2,1
	Risk reduction for vulnerable population	0.7	0.9	1.1	1.4	1.8	2.3	3.0	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
	Prevention for school age children	0.1	0.1	0.1	0.2	0.4	0.7	1.1	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1,9
	Prevention for children without schooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Prevention of HIV/AIDS transmission for PLWHA	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Prevention programs for comercial sex workers and their clients	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
	Prevention programs for men who have sex with men	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Program for the prevention of health damage for drug addicts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Program for prevention in the workplace	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0,3
	Procurement of male condoms in public and comercial sectors	2.8	3.3	3.8	4.3	5.0	5.8	6.6	7.6	7.7	7.8	7.9	8.0	8.1	8.1	8.2	8,3
	Prevention, diagnosis and treatment of sexually transmitted diseases	0.9	1.1	1.3	1.5	1.8	2.1	2.5	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3,2
	Prevention of vertical mother to child transmission	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1,6
	Other prevention	0.8	1.0	1.2	1.4	1.6	1.9	2.3	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3,0
TOTAL			9.2	10.8	12.7	15.0	17.9	21.4	25.8	26.0	26.3	26.6	26.9	27.1	27.4	27.7	27.9
Care and treatment	Ambulatory care	10.5	11.6	13.1	14.8	16.6	18.5	20.6	23.0	23.7	24.5	25.4	26.4	27.7	28.0	28.3	28,5
	Without ARV treatment	6.6	7.4	8.3	9.3	10.4	11.7	13.1	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15,9
	Reactives for people with ARV treatment	1.4	1.4	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.1	3.4	3.6	4.0	4.1	4.1	4,2
	ARV treatment	2.6	2.8	3.2	3.7	4.1	4.6	5.0	5.6	6.0	6.4	6.9	7.5	8.3	8.4	8.4	8,5
	First line	1.9	2.0	2.3	2.6	2.9	3.1	3.3	3.6	3.8	4.1	4.4	4.8	5.3	5.4	5.4	5,5
	Second and third rescue	0.7	0.7	0.9	1.1	1.3	1.5	1.7	2.0	2.1	2.3	2.5	2.7	3.0	3.0	3.0	3,1
	Hospital care	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1,1
	Other care	1.7	1.9	2.1	2.4	2.7	3.0	3.4	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
Total			14.0	15.9	17.9	20.0	22.3	24.9	27.8	28.5	29.4	30.4	31.4	32.8	33.1	33.4	33.7
Orphans and vulnerable children	Education for orphans and vulnerable children (OVC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Support to household and family for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Community support for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Institutional care for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other OVC services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Program	Program planning, coordination, and	4.7	4.7	4.8	4.9	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.9	5.9	6.0	6,0

Table 33 Scenario D2, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
management	management																
	Management and transaction costs associated with handling and disbursement of funds	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0,3
	Surveillance and evaluation	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0,4
	Operations research	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Serosurveillance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Pharmaceutical procurement systems	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1,0
	Information technology	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Patient follow up	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Infrastructure construction and improvement	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1,2
	Other management	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.3	1,3
	Management of programs s.c.o (?)	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1,3
Total			9.2	9.4	9.5	9.7	9.9	10.1	10.3	10.4	10.7	10.9	11.1	11.4	11.5	11.6	11.8
Human resources	Monetary incentives for human resources	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Training	0.6	0.7	0.9	1.0	1.1	1.3	1.5	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1,8
	Other spending on human resources	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
Total			0.9	1.0	1.1	1.3	1.5	1.7	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1
Social protection and social services	Social protection through monetary benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Social protection through in-kind benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other social protection activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Enabling environment	Sensitization	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0,7
	Human rights programs	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	HIV/AIDS-specific institutional development	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0,7
	Women oriented HIV/AIDS programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other enabling environment activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Enabling environment s.c.o. (?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
HIV/AIDS related research	Social sciences research	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Other HIV/AIDS research activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
Grand total			34.4	38.3	42.8	47.8	53.6	60.4	68.4	69.7	71.1	72.6	74.2	76.2	76.9	77.6	78.3

Table 34 Scenario D3, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Prevention	Communication for social and behavioral	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1,4

Table 34 Scenario D3, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	change																
	Community Mobilization	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0,4
	Counseling for voluntary testing	0.5	0.6	0.7	0.9	1.1	1.3	1.6	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2,1
	Risk reduction for vulnerable population	0.7	0.9	1.1	1.4	1.8	2.3	3.0	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
	Prevention for school age children	0.1	0.1	0.1	0.2	0.4	0.7	1.1	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1,9
	Prevention for children without schooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Prevention of HIV/AIDS transmission for PLWHA	0.3	0.4	0.5	0.5	0.6	0.7	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1,0
	Prevention programs for comercial sex workers and their clients	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
	Prevention programs for men who have sex with men	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Program for the prevention of health damage for drug addicts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Program for prevention in the workplace	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
	Procurement of male condoms in public and comercial sectors	2.8	3.0	3.3	3.5	3.8	4.0	4.3	4.7	4.7	4.8	4.8	4.9	4.9	5.0	5.0	5,0
	Prevention, diagnosis and treatment of sexually transmitted diseases	0.9	1.0	1.2	1.4	1.6	1.9	2.2	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2,7
	Prevention of vertical mother to child transmission	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1,6
	Other prevention	0.8	1.0	1.1	1.3	1.5	1.7	2.0	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2,5
TOTAL			8.9	10.1	11.6	13.4	15.5	18.2	21.5	21.8	22.0	22.2	22.4	22.7	22.9	23.1	23.3
Care and treatment	Ambulatory care	10.5	11.4	12.8	14.2	15.7	17.3	19.0	20.9	21.5	22.2	22.9	23.6	24.7	24.9	25.2	25,4
	Without ARV treatment	6.6	7.4	8.3	9.3	10.4	11.7	13.1	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15,9
	Reactives for people with ARV treatment	1.4	1.4	1.6	1.8	2.0	2.1	2.3	2.4	2.6	2.8	3.0	3.3	3.6	3.7	3.7	3,7
	ARV treatment	2.6	2.6	2.9	3.1	3.3	3.5	3.6	3.8	4.1	4.4	4.7	5.1	5.6	5.7	5.7	5,8
	First line	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.9	3.1	3.4	3.6	4.0	4.1	4.1	4,1
	Second and third rescue	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.6	1.6	1.6	1,6
	Hospital care	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1,1
	Other care	1.7	1.9	2.1	2.4	2.7	3.0	3.4	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
Total			13.9	15.5	17.2	19.1	21.1	23.3	25.7	26.3	27.1	27.8	28.6	29.8	30.0	30.3	30.6
Orphans and vulnerable children	Education for orphans and vulnerable children (OVC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Support to household and family for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Community support for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Institutional care for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other OVC services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Program management	Program planning, coordination, and management	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.8	4.9	5.0	5.1	5.2	5.2	5.3	5,3

Table 34 Scenario D3, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Management and transaction costs associated with handling and disbursement of funds	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0,3
	Surveillance and evaluation	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0,4
	Operations research	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Serosurveillance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Pharmaceutical procurement systems	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0,9
	Information technology	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Patient follow up	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Infrastructure construction and improvement	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1,1
	Other management	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1,1
	Management of programs s.c.o (?)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1,1
Total			9.1	9.1	9.1	9.1	9.1	9.1	9.2	9.3	9.5	9.7	9.9	10.1	10.2	10.3	10.4
Human resources	Monetary incentives for human resources	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Training	0.6	0.7	0.9	1.0	1.1	1.3	1.5	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1,8
	Other spending on human resources	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
Total			0.9	1.0	1.1	1.3	1.5	1.7	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1
Social protection and social services	Social protection through monetary benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Social protection through in-kind benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other social protection activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Enabling environment	Sensitization	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0,7
	Human rights programs	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	HIV/AIDS-specific institutional development	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0,7
	Women oriented HIV/AIDS programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other enabling environment activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Enabling environment s.c.o. (?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
HIV/AIDS related research	Social sciences research	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Other HIV/AIDS research activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
Grand total			33.8	37.0	40.6	44.6	49.2	54.6	61.0	62.0	63.2	64.5	65.7	67.4	68.0	68.6	69.2

Table 35 Scenario D4, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Prevention	Communication for social and behavioral	0.5	0.6	0.6	0.7	0.8	1.0	1.1	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1,4

Table 35 Scenario D4, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	change																
	Community Mobilization	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0,5
	Counseling for voluntary testing	0.5	0.6	0.7	0.9	1.1	1.3	1.6	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2,1
	Risk reduction for vulnerable population	0.7	0.9	1.1	1.4	1.8	2.3	3.0	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
	Prevention for school age children	0.1	0.1	0.1	0.2	0.4	0.7	1.1	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1,9
	Prevention for children without schooling	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Prevention of HIV/AIDS transmission for PLWHA	0.3	0.4	0.5	0.6	0.7	0.8	1.0	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Prevention programs for comercial sex workers and their clients	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
	Prevention programs for men who have sex with men	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Program for the prevention of health damage for drug addicts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Program for prevention in the workplace	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0,3
	Procurement of male condoms in public and comercial sectors	2.8	3.0	3.3	3.5	3.8	4.0	4.3	4.7	4.7	4.8	4.8	4.9	4.9	5.0	5.0	5,0
	Prevention, diagnosis and treatment of sexually transmitted diseases	0.9	1.1	1.3	1.5	1.8	2.1	2.5	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3,2
	Prevention of vertical mother to child transmission	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1,6
	Other prevention	0.8	1.0	1.2	1.4	1.6	1.9	2.3	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	3,0
TOTAL			9.0	10.3	11.9	13.8	16.2	19.1	22.8	23.0	23.3	23.5	23.8	24.0	24.2	24.4	24.7
Care and treatment	Ambulatory care	10.5	11.4	12.8	14.2	15.7	17.3	19.0	20.9	21.5	22.2	22.9	23.6	24.7	24.9	25.2	25,4
	Without ARV treatment	6.6	7.4	8.3	9.3	10.4	11.7	13.1	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15,9
	Reactives for people with ARV treatment	1.4	1.4	1.6	1.8	2.0	2.1	2.3	2.4	2.6	2.8	3.0	3.3	3.6	3.7	3.7	3,7
	ARV treatment	2.6	2.6	2.9	3.1	3.3	3.5	3.6	3.8	4.1	4.4	4.7	5.1	5.6	5.7	5.7	5,8
	First line	1.9	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.9	3.1	3.4	3.6	4.0	4.1	4.1	4,1
	Second and third rescue	0.7	0.7	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.4	1.6	1.6	1.6	1,6
	Hospital care	0.5	0.5	0.6	0.6	0.7	0.8	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1,1
	Other care	1.7	1.9	2.1	2.4	2.7	3.0	3.4	3.8	3.8	3.9	3.9	4.0	4.0	4.0	4.1	4,1
Total			13.9	15.5	17.2	19.1	21.1	23.3	25.7	26.3	27.1	27.8	28.6	29.8	30.0	30.3	30.6
Orphans and vulnerable children	Education for orphans and vulnerable children (OVC)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Support to household and family for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Community support for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Institutional care for OVC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other OVC services	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Program management	Program planning, coordination, and management	4.7	5.3	6.1	7.0	8.0	9.2	10.6	12.1	12.3	12.4	12.5	12.7	12.8	12.9	13.0	13,1

Table 35 Scenario D4, 2008-2023 (US$ million)

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Management and transaction costs associated with handling and disbursement of funds	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0,6
	Surveillance and evaluation	0.3	0.4	0.4	0.5	0.6	0.7	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0,9
	Operations research	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Serosurveillance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Pharmaceutical procurement systems	0.8	0.9	1.0	1.2	1.4	1.5	1.8	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2,2
	Information technology	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0,3
	Patient follow up	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Infrastructure construction and improvement	1.0	1.1	1.3	1.4	1.6	1.9	2.2	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7	2,7
	Other management	1.0	1.1	1.3	1.5	1.7	1.9	2.2	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2,8
	Management of programs s.c.o (?)	1.0	1.1	1.3	1.5	1.7	1.9	2.2	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2,7
Total			10.4	11.9	13.6	15.6	17.9	20.6	23.6	23.9	24.1	24.4	24.6	24.9	25.1	25.3	25.6
Human resources	Monetary incentives for human resources	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	Training	0.6	0.7	0.9	1.0	1.1	1.3	1.5	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1,8
	Other spending on human resources	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0,2
Total			0.9	1.0	1.1	1.3	1.5	1.7	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1
Social protection and social services	Social protection through monetary benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Social protection through in-kind benefits	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other social protection activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Enabling environment	Sensitization	0.2	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0,7
	Human rights programs	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0,1
	HIV/AIDS-specific institutional development	0.2	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0,7
	Women oriented HIV/AIDS programs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Other enabling environment activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
	Enabling environment s.c.o. (?)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.6	0.7	0.8	0.9	1.0	1.2	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
HIV/AIDS related research	Social sciences research	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1,2
	Other HIV/AIDS research activities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0,0
Total			0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3
Grand total			35.2	40.0	45.4	51.6	58.7	67.0	76.7	77.9	79.1	80.5	81.8	83.4	84.2	85.0	85.8

Table 36 Scenario S1: External financing grows according to ODA; no additional public resources, only to meet counterpart financing requirements (US$ million)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total funding	14.7	15.7	23.2	35.5	37.5	31.3	31.4	42.2	45.1	48.1	51.4	53.9	57.0	59.2	61.5	63.9	66.4	69.1	71.9	74.8	77.8
Internal sources	7.5	7.8	10.9	17.6	17.8	16.1	13.2	15.3	16.5	18.6	21.6	23.7	26.1	27.7	29.3	31.0	32.8	34.7	36.7	38.9	41.2
Public sources	5.4	5.5	7.1	11.8	13.1	7.9	4.7	6.4	7.1	8.6	11.0	12.5	14.3	15.1	16.0	16.9	17.9	19.0	20.1	21.3	22.5
SESPAS	1.7	1.3	2.6	4.8	3.8	3.7	3.8	4.0	4.2	4.5	4.7	5.0	5.3	5.6	5.9	6.3	6.7	7.0	7.5	7.9	8.4
DIGECITSS	0.8	0.3	0.9	2.3	1.4	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.3	1.4	1.4	1.5	1.6	1.7	1.8
Other	0.9	1.0	1.7	2.5	2.5	2.9	3.0	3.1	3.3	3.5	3.7	3.9	4.2	4.4	4.7	4.9	5.2	5.5	5.8	6.2	6.6
COPRESIDA	3.7	4.2	4.3	6.8	9.1	4.1	0.8	2.3	2.8	4.0	6.2	7.4	8.9	9.4	10.0	10.6	11.2	11.8	12.5	13.3	14.0
Government subsidy	0.1	0.1	0.3	0.2	0.3	0.2	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9	1.0
Global Fund counterpart	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.9	2.3	3.5	5.6	6.9	8.3	8.8	9.3	9.8	10.4	11.0	11.7	12.3	13.1
World Bank counterpart	0.4	1.0	0.8	0.9	0.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Préstamo BM	3.2	3.1	3.2	5.7	8.1	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other public sources	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Private sources	2.1	2.3	3.8	5.8	4.8	8.2	8.5	8.9	9.4	10.0	10.6	11.2	11.8	12.5	13.3	14.0	14.9	15.7	16.6	17.6	18.6
Households	1.7	1.9	3.2	4.9	4.8	8.0	8.3	8.7	9.2	9.8	10.3	10.9	11.6	12.3	13.0	13.7	14.5	15.4	16.3	17.2	18.2
Other	0.3	0.4	0.6	0.9	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
External sources	7.2	7.9	12.3	17.9	19.6	15.3	18.2	26.9	28.6	29.6	29.9	30.2	30.8	31.5	32.2	32.9	33.6	34.4	35.1	35.9	36.7
World Fund	0.0	0.2	4.3	8.7	10.9	12.6	6.9	9.6	11.3	12.2	12.5	12.7	13.0	13.3	13.6	13.9	14.2	14.5	14.8	15.1	15.5
US/PEPFAR	5.5	6.0	5.3	6.5	5.5	1.4	10.0	16.0	16.0	16.0	16.0	16.0	16.4	16.7	17.1	17.5	17.8	18.2	18.6	19.0	19.5
Other external sources	1.7	1.7	2.8	2.7	3.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.8

Table 37 Scenario S2: Same as S1, but ARV costs are financed by government

CONCEPTO	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
TOTAL FONDOS	14,7	15,7	23,2	35,5	37,5	31,3	31,4	42,2	45,1	49,1	53,6	57,6	62,4	65,1	67,8	70,7	73,8	77,3	80,1	83,1	86,2
FUENTES INTERNAS	7,5	7,8	10,9	17,6	17,8	16,1	13,2	15,3	16,5	19,5	23,8	27,4	31,6	33,5	35,6	37,8	40,2	42,9	45,0	47,2	49,6
FUENTES PUBLICAS	5,4	5,5	7,1	11,8	13,1	7,9	4,7	6,4	7,1	9,6	13,2	16,2	19,8	21,0	22,4	23,8	25,3	27,2	28,4	29,6	30,9
SESPAS	1,7	1,3	2,6	4,8	3,8	3,7	3,8	4,0	4,2	4,5	4,7	5,0	5,3	5,6	5,9	6,3	6,7	7,0	7,5	7,9	8,4
- DIGECITSS	0,8	0,3	0,9	2,3	1,4	0,8	0,8	0,9	0,9	1,0	1,0	1,1	1,1	1,2	1,3	1,4	1,4	1,5	1,6	1,7	1,8
- Otros	0,9	1,0	1,7	2,5	2,5	2,9	3,0	3,1	3,3	3,5	3,7	3,9	4,2	4,4	4,7	4,9	5,2	5,5	5,8	6,2	6,6
COPRESIDA	3,7	4,2	4,3	6,8	9,1	4,1	0,8	2,3	2,8	4,0	6,2	7,4	8,9	9,4	10,0	10,6	11,2	11,8	12,5	13,3	14,0
- Subvención Gobierno	0,1	0,1	0,3	0,2	0,3	0,2	0,4	0,5	0,5	0,5	0,6	0,6	0,6	0,7	0,7	0,7	0,8	0,8	0,9	0,9	1,0
- Contrapartida FG	0,0	0,0	0,0	0,0	0,0	0,0	0,4	1,9	2,3	3,5	5,6	6,9	8,3	8,8	9,3	9,8	10,4	11,0	11,7	12,3	13,1
- Contrapartida BM	0,4	1,0	0,8	0,9	0,7	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
- Préstamo BM	3,2	3,1	3,2	5,7	8,1	3,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Otras Fuentes Publicas	0,1	0,1	0,1	0,2	0,2	0,1	0,1	0,1	0,1	1,0	2,3	3,8	5,6	6,0	6,4	6,9	7,5	8,3	8,4	8,4	8,5
FUENTES PRIVADAS	2,1	2,3	3,8	5,8	4,8	8,2	8,5	8,9	9,4	10,0	10,6	11,2	11,8	12,5	13,3	14,0	14,9	15,7	16,6	17,6	18,6
Hogares	1,7	1,9	3,2	4,9	4,8	8,0	8,3	8,7	9,2	9,8	10,3	10,9	11,6	12,3	13,0	13,7	14,5	15,4	16,3	17,2	18,2
Otras Fuentes Privadas	0,3	0,4	0,6	0,9	0,0	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,4
FUENTES EXTERNAS	7,2	7,9	12,3	17,9	19,6	15,3	18,2	26,9	28,6	29,6	29,9	30,2	30,8	31,5	32,2	32,9	33,6	34,4	35,1	35,9	36,7
Fondo Mundial	0,0	0,2	4,3	8,7	10,9	12,6	6,9	9,6	11,3	12,2	12,5	12,7	13,0	13,3	13,6	13,9	14,2	14,5	14,8	15,1	15,5
US / PEPFAR	5,5	6,0	5,3	6,5	5,5	1,4	10,0	16,0	16,0	16,0	16,0	16,0	16,4	16,7	17,1	17,5	17,8	18,2	18,6	19,0	19,5
Resto fuentes externas	1,7	1,7	2,8	2,7	3,2	1,3	1,3	1,3	1,3	1,4	1,4	1,4	1,5	1,5	1,5	1,6	1,6	1,6	1,7	1,7	1,8

Table 38 Scenario S3: All treatment costs are financed by government; external financing remains constant after 2015

CONCEPTO	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
TOTAL FONDOS	14,7	15,7	23,2	35,5	37,5	31,3	31,4	42,2	45,1	49,1	53,6	57,6	62,1	64,0	66,1	68,3	70,6	73,4	75,5	77,7	80,0
FUENTES INTERNAS	7,5	7,8	10,9	17,6	17,8	16,1	13,2	15,3	16,5	19,5	23,8	27,4	31,6	33,5	35,6	37,8	40,2	42,9	45,0	47,2	49,6
FUENTES PUBLICAS	5,4	5,5	7,1	11,8	13,1	7,9	4,7	6,4	7,1	9,6	13,2	16,2	19,8	21,0	22,4	23,8	25,3	27,2	28,4	29,6	30,9
SESPAS	1,7	1,3	2,6	4,8	3,8	3,7	3,8	4,0	4,2	4,5	4,7	5,0	5,3	5,6	5,9	6,3	6,7	7,0	7,5	7,9	8,4
- DIGECITSS	0,8	0,3	0,9	2,3	1,4	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8
- Otros	0,9	1,0	1,7	2,5	2,5	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9
COPRESIDA	3,7	4,2	4,3	6,8	9,1	4,1	0,8	2,3	2,8	4,0	6,2	7,4	8,9	9,4	10,0	10,6	11,2	11,8	12,5	13,3	14,0
- Subvención Gobierno	0,1	0,1	0,3	0,2	0,3	0,2	0,4	0,5	0,5	0,5	0,6	0,6	0,6	0,7	0,7	0,7	0,8	0,8	0,9	0,9	1,0
- Contrapartida FG	0,0	0,0	0,0	0,0	0,0	0,0	0,4	1,9	2,3	3,5	5,6	6,9	8,3	8,8	9,3	9,8	10,4	11,0	11,7	12,3	13,1
- Contrapartida BM	0,4	1,0	0,8	0,9	0,7	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
- Préstamo BM	3,2	3,1	3,2	5,7	8,1	3,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Otras Fuentes Publicas	0,1	0,1	0,1	0,2	0,2	0,1	0,1	0,1	0,1	1,0	2,3	3,8	5,6	6,0	6,4	6,9	7,5	8,3	8,4	8,4	8,5
FUENTES PRIVADAS	2,1	2,3	3,8	5,8	4,8	8,2	8,5	8,9	9,4	10,0	10,6	11,2	11,8	12,5	13,3	14,0	14,9	15,7	16,6	17,6	18,6
Hogares	1,7	1,9	3,2	4,9	4,8	8,0	8,3	8,7	9,2	9,8	10,3	10,9	11,6	12,3	13,0	13,7	14,5	15,4	16,3	17,2	18,2
Otras Fuentes Privadas	0,3	0,4	0,6	0,9	0,0	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,4
FUENTES EXTERNAS	7,2	7,9	12,3	17,9	19,6	15,3	18,2	26,9	28,6	29,6	29,9	30,2	30,5	30,5	30,5	30,5	30,5	30,5	30,5	30,5	30,5
Fondo Mundial	0,0	0,2	4,3	8,7	10,9	12,6	6,9	9,6	11,3	12,2	12,5	12,7	13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0
US / PEPFAR	5,5	6,0	5,3	6,5	5,5	1,4	10,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0	16,0
Resto fuentes externas	1,7	1,7	2,8	2,7	3,2	1,3	1,3	1,3	1,3	1,4	1,4	1,4	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5

Table 39 Scenario S4: All treatment costs are financed by government; external financing remains constant after 2015

CONCEPTO	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
TOTAL FONDOS	14,7	15,7	23,2	35,5	37,5	31,3	31,4	42,2	45,1	49,1	53,6	57,6	62,1	62,5	63,1	64,0	65,0	66,5	67,4	68,5	69,8
FUENTES INTERNAS	7,5	7,8	10,9	17,6	17,8	16,1	13,2	15,3	16,5	19,5	23,8	27,4	31,6	33,5	35,6	37,8	40,2	42,9	45,0	47,2	49,6
FUENTES PUBLICAS	5,4	5,5	7,1	11,8	13,1	7,9	4,7	6,4	7,1	9,6	13,2	16,2	19,8	21,0	22,4	23,8	25,3	27,2	28,4	29,6	30,9
SESPAS	1,7	1,3	2,6	4,8	3,8	3,7	3,8	4,0	4,2	4,5	4,7	5,0	5,3	5,6	5,9	6,3	6,7	7,0	7,5	7,9	8,4
- DIGECITSS	0,8	0,3	0,9	2,3	1,4	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8	0,8
- Otros	0,9	1,0	1,7	2,5	2,5	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9	2,9
COPRESIDA	3,7	4,2	4,3	6,8	9,1	4,1	0,8	2,3	2,8	4,0	6,2	7,4	8,9	9,4	10,0	10,6	11,2	11,8	12,5	13,3	14,0
- Subvención Gobierno	0,1	0,1	0,3	0,2	0,3	0,2	0,4	0,5	0,5	0,5	0,6	0,6	0,6	0,7	0,7	0,7	0,8	0,8	0,9	0,9	1,0
- Contrapartida FG	0,0	0,0	0,0	0,0	0,0	0,0	0,4	1,9	2,3	3,5	5,6	6,9	8,3	8,8	9,3	9,8	10,4	11,0	11,7	12,3	13,1
- Contrapartida BM	0,4	1,0	0,8	0,9	0,7	0,9	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
- Préstamo BM	3,2	3,1	3,2	5,7	8,1	3,1	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Otras Fuentes Publicas	0,1	0,1	0,1	0,2	0,2	0,1	0,1	0,1	0,1	1,0	2,3	3,8	5,6	6,0	6,4	6,9	7,5	8,3	8,4	8,4	8,5
FUENTES PRIVADAS	2,1	2,3	3,8	5,8	4,8	8,2	8,5	8,9	9,4	10,0	10,6	11,2	11,8	12,5	13,3	14,0	14,9	15,7	16,6	17,6	18,6
Hogares	1,7	1,9	3,2	4,9	4,8	8,0	8,3	8,7	9,2	9,8	10,3	10,9	11,6	12,3	13,0	13,7	14,5	15,4	16,3	17,2	18,2
Otras Fuentes Privadas	0,3	0,4	0,6	0,9	0,0	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,3	0,3	0,3	0,3	0,3	0,3	0,4	0,4	0,4
FUENTES EXTERNAS	7,2	7,9	12,3	17,9	19,6	15,3	18,2	26,9	28,6	29,6	29,9	30,2	30,5	29,0	27,5	26,1	24,8	23,6	22,4	21,3	20,2
Fondo Mundial	0,0	0,2	4,3	8,7	10,9	12,6	6,9	9,6	11,3	12,2	12,5	12,7	13,0	12,4	11,7	11,2	10,6	10,1	9,6	9,1	8,6
US / PEPFAR	5,5	6,0	5,3	6,5	5,5	1,4	10,0	16,0	16,0	16,0	16,0	16,0	16,0	15,2	14,4	13,7	13,0	12,4	11,8	11,2	10,6
Resto fuentes externas	1,7	1,7	2,8	2,7	3,2	1,3	1,3	1,3	1,3	1,4	1,4	1,4	1,5	1,4	1,3	1,3	1,2	1,1	1,1	1,0	1,0