



The POLICY Project

The Economic Impact of AIDS

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AIDS has the potential to create severe economic impacts in many African countries. It is different from most other diseases because it strikes people in the most productive age groups and is essentially 100 percent fatal. The effects will vary according to the severity of the AIDS epidemic and the structure of the national economies. The two major economic effects are a reduction in the labor supply and increased costs:

Labor Supply

- The loss of young adults in their most productive years will affect overall economic output
- If AIDS is more prevalent among the economic elite, then the impact may be much larger than the absolute number of AIDS deaths indicates

Costs

- The direct costs of AIDS include expenditures for medical care, drugs, and funeral expenses
- Indirect costs include lost time due to illness, recruitment and training costs to replace workers, and care of orphans
- If costs are financed out of savings, then the reduction in investment could lead to a significant reduction in economic growth

A World Bank study of the economic impacts of AIDS in Africa concluded that the macroeconomic impacts of AIDS could be significant.¹ Yet there is still time to mitigate the economic impact of AIDS; over half of Africa's population live in countries where the epidemic is "concentrated," that is, where HIV infection is concentrated in groups with risky behavior and is not yet widespread in the general population.²

The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy. This paper will consider each of these levels in turn and provide examples from various African countries to illustrate these impacts.

Economic Impact of AIDS on Households

The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
- Household expenditures for medical expenses may increase substantially
- Other members of the household, usually daughters and wives, may miss school or work less in order to care for the sick person
- Death results in: a permanent loss of income, from less labor on the farm or from lower remittances; funeral and mourning costs; and the removal of children from school in order to save on educational expenses and increase household labor, resulting in a severe loss of future earning potential.

Studies in Tanzania, Cote d'Ivoire, Uganda, and Ethiopia have documented the tremendous burden of loss of income, large health care expenditures, and consumption of savings to pay for funeral and mourning costs:

- In **Tanzania**, a study of adult mortality found that 8 percent of total household expenditure went to medical care and funerals in households that had an adult death in the preceding 12 months. In households with no adult death the figure was only 0.8 percent. In addition to increased expenditures, many households experienced a reduction in remittances if the adult member worked outside the home. In partial compensation for these financial setbacks, many households were forced to remove children from school in order to reduce education-related expenditures and have the children help with household chores.³
- | Category | Health Care (%) | Funerals (%) | Total (%) |
|---------------|-----------------|--------------|-----------|
| No AIDS Death | ~7 | ~1 | ~8 |
| AIDS Death | ~10 | ~20 | ~30 |
- In **Cote d'Ivoire**, households with an HIV/AIDS patient spent twice as much on medical expenses as other households. Furthermore, 80 percent of the expenditures went to the AIDS patient, rather than to other household members who are ill. When the person with AIDS died or moved away, average consumption fell by as much as 44 percent during the following year.⁴
 - In **Uganda**, the economic impact of HIV-related deaths was stronger than other types of death, as households lost much of their savings in order to pay health care and funeral expenditures. Asset ownership declined when the death of an HIV+ member occurred, but remained stable when the death was of an HIV- member.⁵
 - In **Ethiopia**, a study of 25 AIDS-afflicted rural families found that the average cost of treatment, funeral and mourning expenses amounted to several times the average household income.⁶

Economic Impact of AIDS on Agriculture

Agriculture is the largest sector in most African economies accounting for a large portion of production and a majority of employment. Studies done in Tanzania and other countries have shown that AIDS will have adverse effects on agriculture, including loss of labor supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In countries where food security has been a continuous issue because of drought, any declines in household production can have serious consequences. Additionally, a loss of agricultural

labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops.⁷ Thus, AIDS could affect the production of cash crops as well as food crops.

- A study done by the **Zimbabwe** Farmers Union (ZFU) showed that the death of a breadwinner due to AIDS will cut the marketed output of maize in small scale farming and communal areas by 61 percent. Similar results were obtained for other crops (see table at right). The fall in marketed output results from losses of labor and remittances and the need to spend scarce resources on medical expenses.⁸

Crops	Reduction in Marketed Output
Maize	61%
Cotton	47%
Vegetables	49%
Groundnuts	37%
Cattle Owned	29%

- In **Ethiopia**, the male head of the household is responsible for special tasks, such as oxen cultivation, harvesting, threshing and farm management. One study found that the effect of an AIDS death varied by region: it would have the most severe effect on harvesting teff in Nazareth, on digging holes for transplanting enset plants in Atat, on ploughing millet fields in Baherdar, and on picking coffee in Yirgalem. Women are generally responsible for other tasks: leveling, weeding, harvesting minor crops, transporting produce, and household duties. The death of the wife to AIDS can make it difficult for other household members to carry out these tasks, in addition to caring for children. The death of a family member because of AIDS also leads to a reduction in savings and investment. The stock of food grain can be depleted to provide food for mourners and the other expenses were met most often by selling livestock. Such loss of productive assets only makes it harder to survive in the future.⁹
- In **Kagabiro village, Tanzania**, when a household contained an AIDS patient, the household labor supply was severely affected: on average, 29% of household labor was spent on AIDS-related matters, including care of the patient and funeral duties. If two people were devoted to nursing duties, as occurred in 66% of the cases, the total labor loss was 43%, on average.¹⁰

- In **Malawi**, 10% of GDP comes from estate agriculture. A recent study evaluated the costs of HIV/AIDS on a tea estate there (see table at right). The study found that the costs are determined by the levels of both employee benefits and of skilled labor necessary for production. It predicted that, in the longer term, the negative impact on the supply

Description	Total Cost (£)	Related to HIV (%)	Cost of HIV (£)
Provision of medical services	22,275	25	5,569
Funeral costs	928	75	696
Death in service benefits	4,691	100	4,691
Absence	14,875	25	3,719
Total	42,769		14,675

of skilled labor will be the strongest effect of HIV/AIDS.¹¹ It will become increasingly difficult to recruit skilled people, even at the national level.

- Data collected in **Uganda** indicate that agricultural tasks were frequently disrupted when women needed to care for household members ill with AIDS-related conditions.¹²

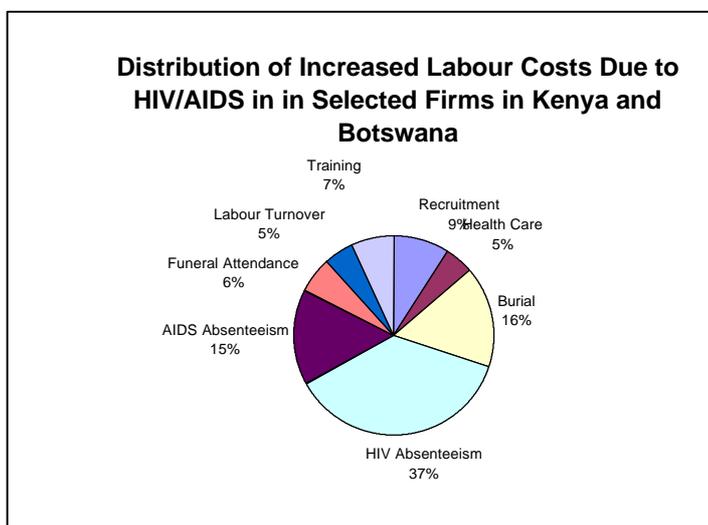
Economic Impact of AIDS on Firms

AIDS may have a significant impact on some firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Expenditures are increased for health care costs, burial fees and training and recruitment of replacement employees. Revenues may be decreased because of absenteeism due to illness or attendance at funerals and time spent on training. Labor turnover can lead to a less experienced labor force that is less productive.

Factors Leading to Increased Expenditure	Factors Leading to Decreased Revenue
Health care costs	Absenteeism due to illness
Burial fees	Time off to attend funerals
Training and recruitment	Time spent on training
	Labor turnover

The actual distribution of these costs has been calculated as part of various USAID-funded AIDSCAP studies of the private sector impact of AIDS:

- One study examining several firms in **Botswana** and **Kenya** showed that the most significant factors in increased labor costs were absenteeism due to HIV or AIDS and increased burial costs as shown in the figure to the right.¹³



- Another study in **Zimbabwe** found that the major expense was health care costs. The transport company in this study has a large staff of 11,500 workers. Since the company offers significant health benefits to its employees, the cost of AIDS is even higher than for other companies that do not provide such benefits. The study estimated that there are currently more than 3,400 workers who are infected with HIV and 64 who died from AIDS in 1996. The total costs of AIDS to the company in 1996 were estimated at Z\$39 million, equal to about 20 percent of the company's profits. More than half of this amount resulted from increased health care costs. By 2005 the cost of AIDS to

the company could reach Z\$108 million. There may be indirect costs as well. The report speculates that HIV/AIDS will worsen employee morale and create greater labor-management tensions and cause a labor shortage among skilled positions.¹⁴

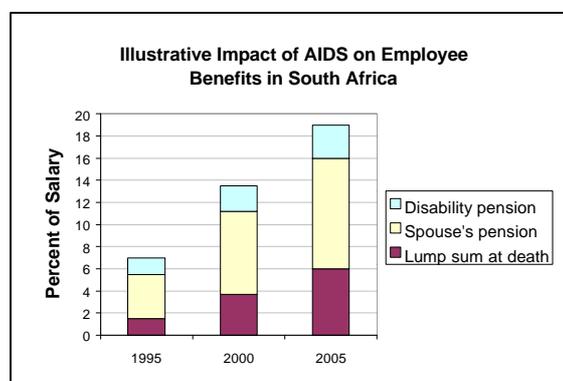
Various studies have also examined the total annual cost of AIDS to different companies, as well as the annual cost of AIDS per employee.¹⁵ These studies found that the annual cost of AIDS per employee varied from US\$17 to US\$300, as shown in the table below:

Company Name	Total Annual Cost of AIDS	Annual Cost of AIDS per Employee
Botswana Diamond Valuing	US\$ 125,941	US\$ 237
Botswana Meat Commission	US\$ 370,200	US\$ 268
Cote d'Ivoire food processing firm	US\$ 33,207	US\$ 120
Cote d'Ivoire textile firm	US\$ 32,667	US\$ 29
Cote d'Ivoire packaging firm	US\$ 10,398	US\$ 125
Kenyan automobile firm	US\$ 21,312	US\$ 17
Kenyan transport firm	US\$ 61,132	US\$ 28
Muhoroni Sugar, Kenya	US\$ 58,303	US\$ 49
Kenyan lumber firm	US\$ 40,630	US\$ 25
Uganda Railway Corporation	US\$ 77,000	US\$ 300

Increased labor costs can reduce the profits necessary for expansion. This impact on profits can be considerable:

- The Indeni Petroleum Refinery in **Zambia** spent US\$26,400 on AIDS-related costs in 1994, more than its declared profits of US\$25,514 in that year.¹⁶

- A study in **South Africa** examined the expected impact of AIDS on employee benefits, and thus on corporate profits. It found that at current levels of benefits per employee, the total costs of benefits would rise from 7 percent of salaries in 1995 to 19 percent by 2005. Since these additional costs will have to be paid at the same time that productivity is declining, due to AIDS, the net impact on profits could be significant.¹⁷



Finally, other costs associated with AIDS that firms face include:

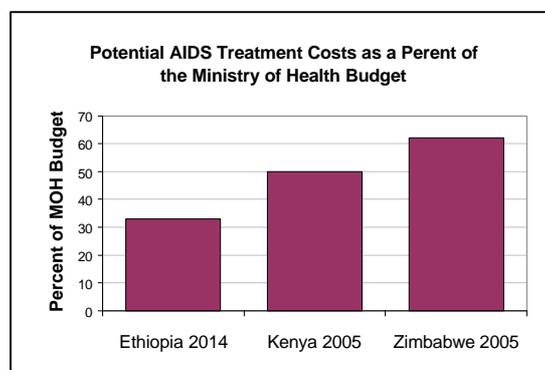
- The **Uganda** Railway Corporation has been hard hit by AIDS among its employees, experiencing a labor turnover rate of 15 percent per year in recent years.¹⁸
- Medical aid companies in **Zimbabwe** have estimated that meeting all the claims of just one percent of HIV-infected members could result in a 31 percent increase in insurance rates. Most of this increase would have to be paid by employers.¹⁹

For some smaller firms the loss of one or more key employees could be catastrophic, leading to the collapse of the firm. In others, the impact may be small. Firms in some key sectors, such as transportation and mining, are likely to suffer larger impacts than firms in other sectors. In poorly managed situations the HIV-related costs to companies can be high. However, with proactive management these costs can be mitigated through effective prevention and management strategies.

Impacts on Other Economic Sectors

AIDS will also have significant effects in other key sectors. Among them are health, transport, mining, education and water.

- **Health.** AIDS will affect the health sector for two reasons: (1) it will increase the number of people seeking services and (2) health care for AIDS patients is more expensive than for most other conditions. The number of AIDS patients seeking care is already overwhelming health care systems. In many hospitals in Africa, half of hospital beds are now occupied by AIDS patients. AIDS is also an



expensive disease. The graph shows projected expenditure on AIDS as a percentage of public health spending for three African countries.²⁰ On average, treating an AIDS patient for one year is about as expensive as educating ten primary school students for one year. Governments will face trade-offs along at least three dimensions: treating AIDS versus preventing HIV infection; treating AIDS versus treating other illnesses; and spending for health versus spending for other objectives. Maintaining a healthy population is an important goal in its own right and is crucial to the development of a productive workforce essential for economic development.

- **Transport.** The transport sector is especially vulnerable to AIDS and important to AIDS prevention. Building and maintaining transport infrastructure often involves sending teams of men away from their families for extended periods of time, increasing the likelihood of multiple sexual partners. The people who operate transport services (truck drivers, train crews, sailors) spend many days and nights away from their families. A survey of bus and truck drivers in Cameroon found that they spent an average of 14 days away from home on each trip and that 68 percent had sex during the most recent trip and 25 percent had sex every night they were away.²¹ Most transport managers are highly trained professionals who are hard to replace if they die. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.

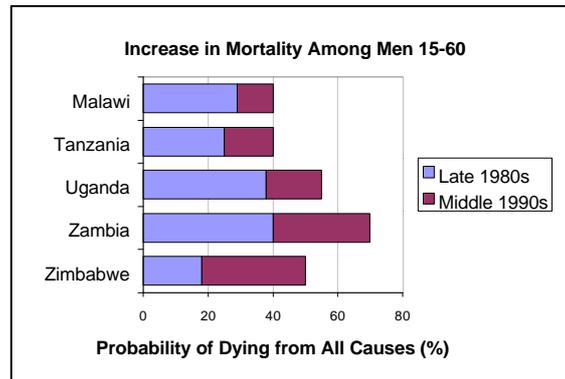
- **Mining.** The mining sector is a key source of foreign exchange for many countries. Most mining is conducted at sites far from population centers forcing workers to live apart from their families for extended periods of time. They often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. Highly trained mining engineers can be very difficult to replace. As a result, a severe AIDS epidemic can seriously threaten mine production.
- **Education.** AIDS affects the education sector in at least three ways: the supply of experienced teachers will be reduced by AIDS-related illness and death; children may be kept out of school if they are needed at home to care for sick family members or to work in the fields; and children may drop out of school if their families can not afford school fees due to reduced household income as a result of an AIDS death. Another problem is that teenage children are especially susceptible to HIV infection. Therefore, the education system also faces a special challenge to educate students about AIDS and equip them to protect themselves.
- **Water.** Developing water resources in arid areas and controlling excess water during rainy periods requires highly skilled water engineers and constant maintenance of wells, dams, embankments, etc. The loss of even a small number of highly trained engineers can place entire water systems and significant investment at risk. These engineers may be especially susceptible to HIV because of the need to spend many nights away from their families.

Macroeconomic Impact of AIDS

The macroeconomic impact of AIDS is difficult to assess. Most studies have found that estimates of the macroeconomic impacts are sensitive to assumptions about how AIDS affects savings and investment rates and whether AIDS affects the best-educated employees more than others. Few studies have been able to incorporate the impacts at the household and firm level in macroeconomic projections. Some studies have found that the impacts may be small, especially if there is a plentiful supply of excess labor and worker benefits are small. Other studies have found significant macroeconomic impacts. Studies in Tanzania, Cameroon, Zambia, Swaziland, Kenya and other sub-Saharan African countries have found that the rate of economic growth could be reduced by as much as 25 percent over a 20-year period.

There are several mechanisms by which AIDS affects macroeconomic performance.

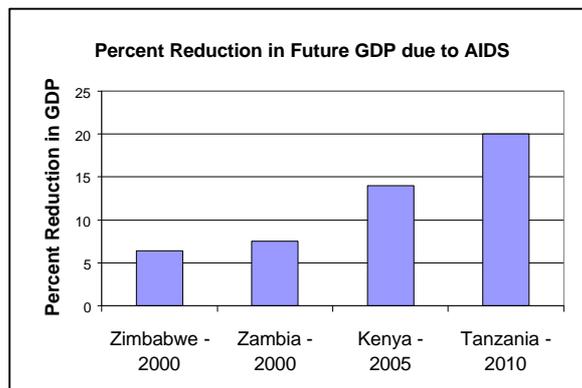
- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced. The graph to the right illustrates the magnitude of the problem in five African countries.²² It shows the increase in mortality among men of working age from the late 1980s to the mid-1990s. Most, if not all, of this increase is due to AIDS.



- A shortage of workers leads to higher wages, which leads to higher domestic production costs. Higher production costs lead to a loss of international competitiveness which can cause foreign exchange shortages.
- Lower government revenues and reduced private savings (because of greater health care expenditures and a loss of worker income) can cause a significant drop in savings and capital accumulation. This leads to slower employment creation in the formal sector, which is particularly capital intensive.
- Reduced worker productivity and investment leads to fewer jobs in the formal sector. As a result some workers will be pushed from high paying jobs in the formal sector to lower paying jobs in the informal sector.
- The overall impact of AIDS on the macro-economy is small at first but increases significantly over time.

Several studies have found that these effects could be large in some African countries.

- A World Bank study examined the macroeconomic impact of AIDS in 30 sub-Saharan African countries.²³ This study concluded that the net effect is likely to be a reduction of the annual growth rate of GDP of 0.8 to 1.4 percentage points per year and a 0.3 percentage point reduction in the annual growth rate of GDP per capita.



- A simulation model of the economy of **Cameroon** concluded that the annual growth rate of GDP could have been reduced by as much as 2 percentage points during the 1987-1991 period because of AIDS.²⁴

- A study of the macroeconomic impacts of AIDS in **Zambia** found that by 2000 the GDP would be 5 to 10 percent lower because of AIDS than it would be if there were no AIDS affecting the population. The authors concluded, “...without unprecedented infusions of free foreign aid to mitigate the effects of AIDS, the economy of Zambia will suffer considerable damage.”²⁵
- An assessment of the macroeconomic impacts of AIDS in **Tanzania** by the Government of Tanzania, the World Bank and the World Health Organization in 1991 found that total GDP will be 15 to 25 percent smaller in 2010 because of the impact of AIDS.²⁶
- A study of the impact of AIDS on the economy of **Kenya** projected that GDP will be 14 percent lower in 2005 than it would have been without AIDS. GDP per capita will be 10 percent less in 2005.²⁷

What Can Be Done?

AIDS has the potential to cause severe deterioration in the economic conditions of many countries. However, this is not inevitable. There is much that can be done now to keep the epidemic from getting worse and to mitigate the negative effects. Among the responses that are necessary are:

- **Prevent new infections.** The most effective response will be to support programs to reduce the number of new infections in the future. After more than a decade of research and pilot programs, we now know how to prevent most new infections. An effective national response should include information, education and communications; voluntary counseling and testing; condom promotion and availability; expanded and improved services to prevent and treat sexually transmitted diseases; and efforts to protect human rights and reduce stigma and discrimination. Governments, NGOs and the commercial sector, working together in a multi-sectoral effort can make a difference. Workplace-based programs can prevent new infections among experienced workers.
- **Design major development projects appropriately.** Some major development activities may inadvertently facilitate the spread of HIV. Major construction projects often require large numbers of male workers to live apart from their families for extended periods of time, leading to increased opportunities for commercial sex. A World Bank-funded pipeline construction project in Cameroon was redesigned to avoid this problem by creating special villages where workers could live with their families. Special prevention programs can be put in place from the very beginning in projects such as mines or new ports where commercial sex might be expected to flourish.

- **Programs to address specific problems.** Special programs can mitigate the impact of AIDS by addressing some of the most severe problems. Reduced school fees can help children from poor families and AIDS orphans stay in school longer and avoid deterioration in the education level of the workforce. Tax benefits or other incentives for training can encourage firms to maintain worker productivity in spite of the loss of experienced workers.

- **Mitigate the effects of AIDS on poverty.** The impacts of AIDS on households can be reduced to some extent by publicly funded programs to address the most severe problems. Such programs have included home care for people with HIV/AIDS, support for the basic needs of the households coping with AIDS, foster care for AIDS orphans, food programs for children and support for educational expenses. Such programs can help families and particularly children survive some of the consequences of an adult AIDS death that occur when families are poor or become poor as a result of the costs of AIDS. The costs of these programs can vary widely.²⁸

Type of Programme	Annual Cost (US\$)
Home care for people with AIDS	\$227 per patient
Orphanage care	\$1,063 per child
Foster care	\$185 per child
Feeding post	\$69 per child
Basic needs support	\$47 per household
Educational support	\$13 per child

A strong political commitment to the fight against AIDS is crucial. Countries that have shown the most success, such as Uganda, Thailand and Senegal, all have strong support from the top political leaders. This support is critical for several reasons. First, it sets the stage for an open approach to AIDS that helps to reduce the stigma and discrimination that often hamper prevention efforts. Second, it facilitates a multi-sectoral approach by making it clear that the fight against AIDS is a national priority. Third, it signals to individuals and community organizations involved in the AIDS programs that their efforts are appreciated and valued. Finally, it ensures that the program will receive an appropriate share of national and international donor resources to fund important programs.

Perhaps the most important role for the government in the fight against AIDS is to ensure an open and supportive environment for effective programs. Governments need to make AIDS a national priority, not a problem to be avoided. By stimulating and supporting a broad multi-sectoral approach that includes all segments of society, governments can create the conditions in which prevention, care and mitigation programs can succeed and protect the country's future development prospects.

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