



**The POLICY Project**

# **The Economic Impact of AIDS in Senegal**

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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

The economy of Senegal is predominantly agricultural, where the agricultural sector employed 74% of the economically active population in 1995, although the sector contributed only 18% of GDP in 1997. The main food products are groundnuts, millet, sorghum, rice, and maize, although the country imports cereals, particularly if the harvest is affected by weather conditions. Cash crops include groundnuts and cotton, as well as fish and fish products. Foreign exchange revenues are also earned by selling fishing licenses to the European Union. The services sector accounted for 59% of GDP in 1997, including tourism and revenue from the port of Dakar, which is an important regional trading center. The mining of calcium phosphates is another important contribution to the export earnings of the economy. Disadvantages for the economy consist of a high population growth rate, dependence on a narrow export base, and vulnerability to agricultural production fluctuations.<sup>1</sup>

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 Senegal to illustrate these impacts.

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<sup>1</sup> Europa World Year Book 1998, Volume 2 (1998) Europa Publications Limited (London).

## **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.
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- One study examined the conditions of 19 children who have been orphaned due to AIDS. In general, when the father died of AIDS, the consequences are worse because relatives cannot give financial help over the long-run, as they themselves do not have great financial resources. When the mother died of AIDS, the children generally left school. The families who adopt the orphans end up being quite large; about 58% of them have between 6 and 10 members in the household, while 26% have more than 10, and 16% have less than 6 household members.<sup>2</sup>
  - Households in Senegal pay a significant proportion of their own medical expenses; at least 40 percent of total health expenditures are paid by households. For some households, expenditures on health are second only to food expenditures. Extra medical costs from caring for HIV/AIDS patients will place an additional burden on Senegalese households.<sup>3</sup>

## **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

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<sup>2</sup> De Carvalho, NP and P Sambou. (1993) "Orphelins du SIDA dans la region de Dakar: enquete sur leurs conditions de vie en vue d'une strategie d'intervention pour leur prise en charge," sous la direction de Monsier Souleymane MBOUP, Professeur de Bacteriologie-Virologie, mimeo.

<sup>3</sup> Pisani, E et al., UNAIDS, "Acting early to prevent AIDS: The case of Senegal," UNAIDS, Geneva, Switzerland, 1999.

may mean switching from export crops to food crops. Thus, AIDS could affect the production of cash crops as well as food crops.

### **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

- A study of three firms in Senegal found that management did not think there was a great risk of HIV/AIDS having a large impact on their business. La Compagnie Senegalaise des Phosphates de Taiba (CSPT) was the largest mining company of phosphate in Senegal at the time of the survey, with 1,330 employees. It has since been acquired by Industrie Chimique de Senegal (ICS). Management there felt that there would be little impact of HIV/AIDS, due to the low prevalence and to the large number of unskilled laborers available in general. The company does, however, provide full health care coverage, funeral expenses, and retirement benefits to all employees, so the impact of HIV/AIDS could be substantial, if prevalence rates were to increase. Parke Davis, a pharmaceutical company producing primarily for export, has not had any cases of HIV infection reported as of the survey date. The company has sponsored a conference to raise awareness of AIDS for its employees, but plans on no further activities. The Port Autonome de Dakar (PAD) is responsible for the port facilities of Dakar, and is fairly capital-intensive. Although the risk of HIV transmission is greater for its employees, because they are relatively well-paid and mobile, the company has not created a prevention program, although the company physician intended to establish one shortly after the date of the survey. Again, the impact of HIV/AIDS in the company could be substantial, if prevalence rates increase, because of the benefits package provided to employees.<sup>4</sup>

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

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<sup>4</sup> Roberts, M and B Rau. (1997) "Private Sector AIDS Policy African Workplace Profiles: Case Studies on Business Managing HIV/AIDS," The AIDSCAP Electronic Library (Family Health International/The AIDS Control and Prevention Project, Durham, North Carolina).

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. 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.
- The Ministry of Health decided in 1997 to introduce triple cocktail therapy, hoping to recruit 60 patients by the end of 1998. Usually, the cost of this therapy is about 600,000 CFA (US\$1,000) per month; the national program, however, negotiated a price of 362,000 CFA (US\$603) per month. Note that, if all people living with HIV/AIDS were provided the triple therapy, the total cost in 1997 would be about US\$1.5 million per month.<sup>5</sup>
- **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. 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.

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<sup>5</sup> Diop, I. (1999) Consultant report prepared as background for this paper.

- **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.

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.
- 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.
- In Senegal, the low prevalence (about 1%) implies that the overall impact of HIV/AIDS has not been significant as of yet.<sup>6</sup>

### 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.
- In Senegal, the government has had a strong focus on public education, in order to maintain the HIV prevalence rate at its current low level. This program stems from previous programs that addressed the issues of STDs and commercial sex workers.<sup>7</sup> Registered sex workers are required to have regular health checks in Senegal, as part of the legalization process that occurred in 1969. Thus it is easier to monitor the epidemic, and provide preventive programs to these registered workers. It is estimated, however, that there are at least as many unregistered sex workers as there are registered sex workers, who are not required to undergo periodic health exams. Between 1992 and 1996, the government spent almost US\$20 million in AIDS prevention programs, in addition to the monies received by international donors. One possible outcome of this investment is a marked increase in condom use during casual sex. Men report using a condom 67 percent of the time during casual sex in 1997, compared with basically zero before the AIDS epidemic.<sup>8</sup>

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<sup>6</sup> Diop, I. (1999) Consultant report prepared as background for this paper

<sup>7</sup> "HIV/AIDS country profile: Senegal," AIDS Analysis Africa, Dec 1996, pp. 4-7, based on a study sponsored by the European Commission to examine the social and economic risk factors in the HIV/AIDS epidemic in nine countries.

<sup>8</sup> Pisani, E et al., UNAIDS, "Acting early to prevent AIDS: The case of Senegal," UNAIDS, Geneva, Switzerland, 1999.

- **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.
  - A program was set up at the end of 1996 in the Fann University Hospital in Dakar, to provide care for HIV-positive patients and training for hospital staff. The initial budget, funded by the NGO Opals-Senegal, was US\$360,000.<sup>9</sup>
- **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.

*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*

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<sup>9</sup> “Highlights in brief,” AIDS Analysis Africa, Aug/Sept 1996, p. 7.

*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.*