



United States
Department of
Agriculture



Economic
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ISSUES

IN FOOD SECURITY

Toll on Agriculture from HIV/AIDS in Sub-Saharan Africa

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Agriculture Information Bulletin Number 765-9

June 2001

Issue. Labor remains an important component of agricultural production in Sub-Saharan Africa because of the limited use of purchased inputs. Since AIDS affects adults in their prime productive years, labor shortages are becoming a major concern in some countries. As the epidemic spreads in rural areas, any changes in availability and productivity of the labor force will directly affect food production—and consumption. Sub-Saharan Africa, with 11 percent of global population, has an estimated 73 percent of global HIV/AIDS-related infections. Little is known about the net effect of AIDS on the agricultural economy, but there is no question that food insecurity will increase in the severely affected countries.

Background. During the last two decades, per capita food consumption declined in the region, and the prospects for improvement are not promising due to limited use of new technologies to boost domestic food production. Sub-Saharan Africa is faced with a decline in population growth rates, not as a natural progression of development, but as a result of the rapid spread of HIV/AIDS. The potential impact of the disease on food production is of major concern because of the region's already low and declining per capita food consumption and low level of agricultural productivity.

The two most severely affected regions are Southern and Eastern Africa. In Southern Africa, seven countries—Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe—are reported to have adult HIV prevalence of more than 20 percent. In these countries, life expectancy is projected to decline to 30 to 40 years from 60 to 70 years (the estimate used before the spread of HIV/AIDS). According to a United Nations report, about 55 percent of all HIV infections in Sub-Saharan Africa are among women. Peak HIV prevalence among women occurs at age 25, 10-15 years earlier than for men, thus changing the structure of the population. This also means that the most productive age cohort, 15-45, is dying the fastest from AIDS.

In the most highly affected countries, slow growth in agricultural productivity and the overall economy resulted in growing food insecurity over the last two decades. Even in countries like Uganda where food supplies are projected to be nutritionally adequate, food insecurity remains a major concern because of low incomes and a skewed income distribu-

Grain market performance profile for selected countries

	Annual production growth		2010 ratio of nutritional gap to	
	1980-99	1989-99	Production	Imports
Percent				
East Africa:				
Kenya	0.44	-1.04	12.12	25.21
Tanzania	2.03	0.00	33.57	353.67
Uganda	2.18	1.29	0.00	0.00
Southern Africa:				
Malawi	1.83	4.14	18.11	213.54
Zambia	-1.22	-3.63	69.91	356.20
Zimbabwe	-1.06	-0.1	2.41	21.75

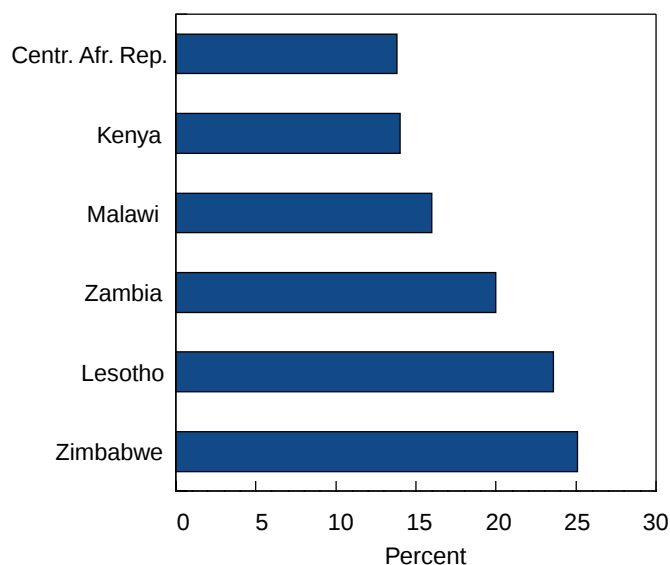
Source: ERS/USDA

tion. The table shows the projected nutritional vulnerability in selected countries highly affected by AIDS. Since limited conventional inputs are used, labor remains a main component of agricultural production. By reducing the number of farm laborers, the AIDS epidemic could significantly diminish the region's food security.

Our projections of crop production usually assume that the marginal productivity of labor remains constant over the projection period. For the Sub-Saharan countries, this is an overestimation because the decline in population growth is partly due to the spread of AIDS, which affects the most productive segment of the population. To examine the likely impact of the reduction in labor productivity, we reduced the marginal productivity of labor from 0.3 to 0.2 in the Southern African countries.¹ Such a decline, coupled with a reduction in the number of agricultural laborers, will reduce labor productivity by 12 percent per year for the region. As a result of the decline in labor productivity, grain output fell 3.3 percent relative to the base-level projections, causing food gaps to grow. The region's food gap to maintain per capita consumption levels jumped 15 percent, while the nutrition gap rose an estimated 13 percent. In the highly affected areas, productivity losses will likely be higher. The World Health Organization

¹For every 1-percent decrease (increase) in the supply of labor, production will decrease (increase) by 0.3 percent.

Adult HIV infection rate



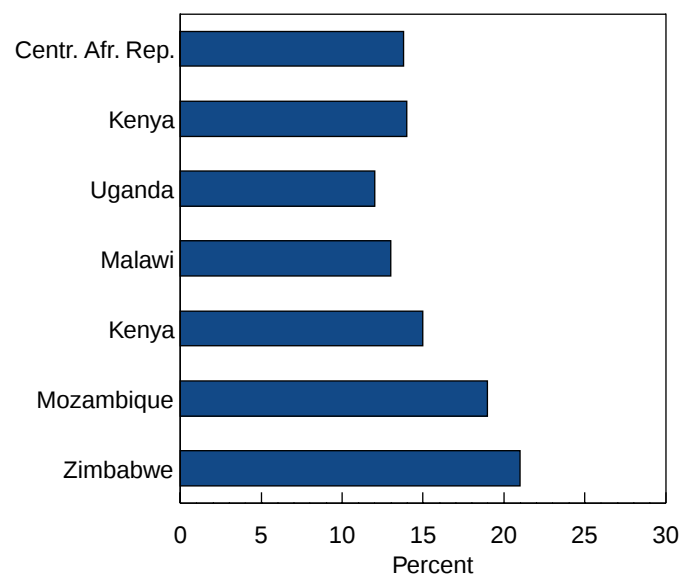
Source: UNAIDS, 12/1999.

estimates that local losses in agricultural productivity from AIDS at the household or village level range from 10 to 50 percent in about 10 Sub-Saharan African countries.

The high rate of infection among women, in particular, will have enormous implications on nutrition and poverty. Many farms are headed by women, and on other farms women provide a large portion of total labor. For example, a study of two towns in Tanzania found that women provided 48 percent of agricultural labor, including land preparation, planting, weeding, and harvesting, while men did most of the marketing. Economic consequences will be compounded by the fact that women are barred from owning land in many countries. If a husband dies, the wife's lack of collateral limits her ability to obtain credit to keep the farm in operation or to purchase labor-saving technology. Also, an increase in the number of orphans increases the child-care responsibilities of healthy women in the community who must care for the sick and dying as well. These additional duties compound the negative impact of AIDS on agriculture because these women will have less time for farming activities.

Another factor that can worsen the situation is a labor-induced change in cropping patterns. For example, as the labor supply declines, farmers may move away from labor-intensive export crops to more subsistence crops that use less labor. Among food crops, a switch from corn to cassava would conserve considerable labor. But cassava is less nutritious than corn, and nutritional intake is already below minimum standards in several countries, including the highly affected AIDS countries. In 14 of the 17 countries in East and

Estimated percentage of labor force lost to AIDS in 2020



Source: UNAIDS, 12/1999.

Southern Africa, per capita daily caloric intake is below the level required to attain a minimum nutritional standard (the calories required to sustain life with minimum activity). The nutritional vulnerability of the countries is projected to grow by 30 percent in the next decade. A domino effect follows: food supply deficits and decreased healthiness lower agricultural productivity through reduced food availability, which further reduces agricultural productivity and may hasten the onset of AIDS in weakened HIV-positive people.

Alternatives. There are some success stories in the region. Uganda, for example, has launched major preventive efforts during the last decade and has managed to reduce the rate of infection. Growing awareness by officials at the international level has led to an increase in financial aid to improve and expand the preventive measures to reduce the rate of infection. This should ease economic as well as health costs and support national programs. Based on success stories in the region, educational messages to prevent the spread of disease, combined with economic assistance to cope with the situation, are the most efficient ways of using new financial resources. To promote self-reliance and more sustainable responses in areas highly affected by HIV, communities can be encouraged to diversify their economic activities. Many communities in Africa have started income-generating activities such as raising poultry or gardening to improve their financial situation and to help families affected by HIV/AIDS. In Malawi and Uganda, village banks give small loans to households to start their own enterprise such as market trading and honey production (USAID, "Impact of HIV," June 2000).

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