

## Chapter 04



## THE IMPACT OF AIDS ON PEOPLE AND SOCIETIES

In the approximately 25 years since AIDS emerged as a major health emergency, the epidemic has had a serious, and in many places devastating, effect on human development. In some countries, AIDS is undermining progress towards the Millennium Development Goals, particularly those related to poverty reduction, achieving universal primary education, promoting gender equality, reducing child mortality and improving the health of mothers (IAVI, 2005; UNFPA, 2003).

The scale of the epidemic's impact, highly varied from place to place, has been documented with increasing precision over the years as surveillance and analytical tools have improved. As a result, the interrelationship of AIDS with other problems of human development has become clearer. The late Jonathan Mann's insight from the early 1990s—that AIDS shines a spotlight on human rights and societal issues—has been borne out in many ways, particularly in the epidemic's interactions with poverty, gender inequality and social exclusion (Mann et al., 1994). Research over the past few years has shown how it exacerbates other major challenges to development, from the deterioration of public services and governance to humanitarian emergencies such as food insecurity and conflict. As a recent study of the relationship between AIDS and famine in

southern Africa states, "HIV/AIDS accentuates existing difficulties, compelling us to confront many simultaneous problems, all of which need resolution" (de Waal and Whiteside, 2003).

The impact of AIDS is still not fully understood, particularly when the long term is considered. The epidemic comes in successive waves, with the first wave being HIV infection, followed several years later by a wave of opportunistic diseases, and later still by a wave of AIDS illness and then death (Barnett and Whiteside, 2002). The final wave affects societies and economies at various levels, from the family and community to the national and international levels. None of the highly affected countries have yet hit the peak of the third wave nor advanced very far into the fourth, and as one study put it (Bell et al., 2003):

*We don't know how severe the impacts of the third and fourth waves will be—little about this pandemic is linear and AIDS is a unique threat . . . What for example is the likely long-term damage—social, economic, psychological—wrought by the orphaning of millions of children? What we do know is that impacts will continue to be felt for years to come and the situation will get significantly worse before it gets better.*

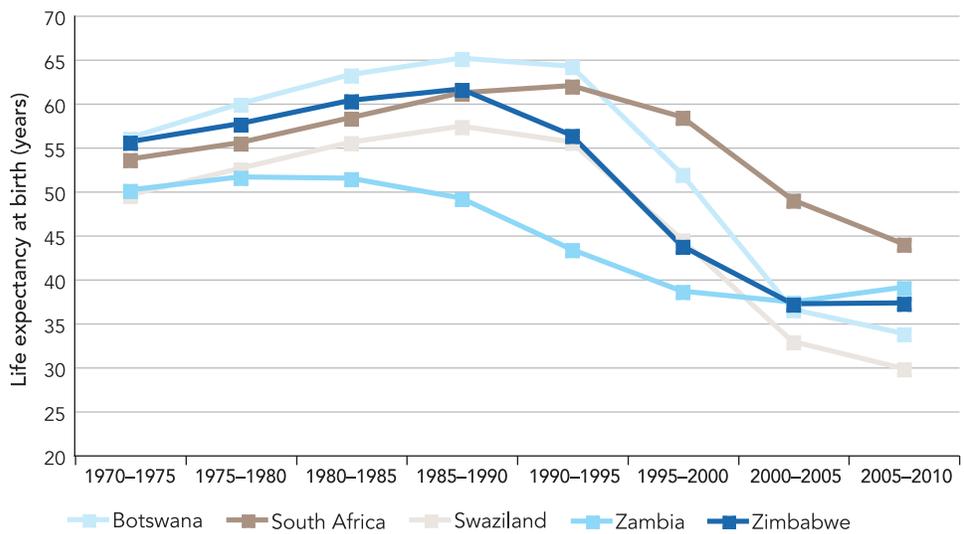
Determined responses in prevention, care, support and treatment can do much to reduce the epidemic's impact, and welcome surprises may be in store as antiretroviral treatment is rolled out around the world. Yet one thing is sure: No matter how the AIDS epidemic takes shape in any given country, its social and economic effects—and particularly its erosion of human capital—will continue to grow for many years after prevalence begins to fall. This has important implications, discussed in later chapters, for efforts to mitigate the epidemic's impact.

### Population and population structure

The overall impact of AIDS on the global population has not yet reached its peak, and its demographic effects will likely be felt well into the second half of the 21st century. Current projections suggest that by 2015, in the 60 countries most affected by AIDS, the total population will be 115 million less than it would be in the absence of AIDS. Africa will account for nearly three-quarters of this difference in 2050, and although life expectancy for the entire continent will have risen to 65.4 years from the current 49.1 years, it will still be almost 12 to 17 years less than life expectancy in other regions of the world (UN Population Division, 2005b). The modelled impact on life expectancy in some of the hardest-hit countries can be seen in Figure 4.1.

In the most severely affected countries of sub-Saharan Africa, AIDS continues to slow or reverse improvements in life

**FIGURE 4.1** Impact of AIDS on life expectancy in five African countries, 1970–2010



Source: United Nations Population Division (2004). World Population Prospects: The 2004 Revision, database.

### ADDRESSING THE HUMAN DEVELOPMENT IMPACT OF THE AIDS EPIDEMIC

Responding to AIDS is one of the core priorities of the United Nations Development Programme (UNDP). The organization's Human Development Reports are an important source of information and analysis on the epidemic's socioeconomic impact and serve as policy and advocacy tools for promoting strategies to reverse its spread.

While many methods exist for measuring the impact of AIDS, the human development approach focuses on people rather than medical or economic indicators. UNDP's Human Development Index captures three basic dimensions of human development: a long and healthy life—measured by life expectancy at birth; knowledge—measured by adult literacy and school enrolment; and standard of living—measured by per capita gross domestic product (UNDP, 2005).

The 2005 Human Development Report identified AIDS as the factor inflicting the single greatest reversal in human development history (UNDP, 2005). Between 1990 and 2003, many of the countries most severely affected by AIDS dropped sharply in the global ranking of countries on the Human Development Index. South Africa fell by 35 places, Zimbabwe by 23, Botswana by 21, Swaziland by 20, Kenya by 18, Zambia by 16 and Lesotho by 15. (The report ranked 135 countries across regions, using data from both 1990 and 2003.)

In addition to the annual global report, national and regional Human Development Reports on HIV and AIDS have been produced by several countries (Botswana, Burkina Faso, Burundi, Cambodia, Ghana, Namibia, Nigeria, South Africa, Uganda, Zimbabwe) and regions (including eastern Europe, southern Africa and south Asia).

The reports promote a better understanding of the epidemic's impact at household, community and national levels and propose actions tailored to specific conditions. For example, the Zimbabwe report draws attention to the increasing number of students, particularly girls, who drop out of school to look after family members affected by AIDS, and highlights priorities for increasing gender equality (UNDP, 2003b). The eastern Europe report calls for a rebalancing of social policies, so that injecting drug use and sex work are addressed through a human rights and public health lens (UNDP, 2004).

More information and access to the reports are available at the Human Development Report website, <http://hdr.undp.org>.

expectancy and distort the age-sex structures of entire populations. Although the majority of highly affected countries in the region have seen declining life expectancy due to the epidemic—and other factors such as armed conflict, economic stagnation, and the resurgence

of tuberculosis, malaria and other diseases—overall populations will grow in most of these countries because of high fertility rates.

Part of the impact of AIDS on life expectancy in sub-Saharan Africa is due to

child mortality, either directly or indirectly related to AIDS. The steady progress towards improved life expectancy that was being made until the advent of the epidemic has eroded. In Botswana, under-five mortality had been reduced to 62 deaths per thousand live births between 1990 and 1995; today, under-five mortality is approximately 106 deaths per thousand live births. However, the biggest increase in mortality has been among adults aged 20–49, reversing the previous distribution of deaths according to age. Whereas this age group had accounted for only 20% of all deaths between 1985 and 1990, today they account for almost 60%. This is illustrated in Figure 4.2, which compares the current distribution of deaths by age in southern Africa with the distribution before the AIDS epidemic struck with full force. This phenomenon reverses the usual pattern of disease-related mortality, normally concentrated among the very young and very old. Instead, AIDS strikes down adults in their most economically productive years and removes the very people who could respond to a crisis.

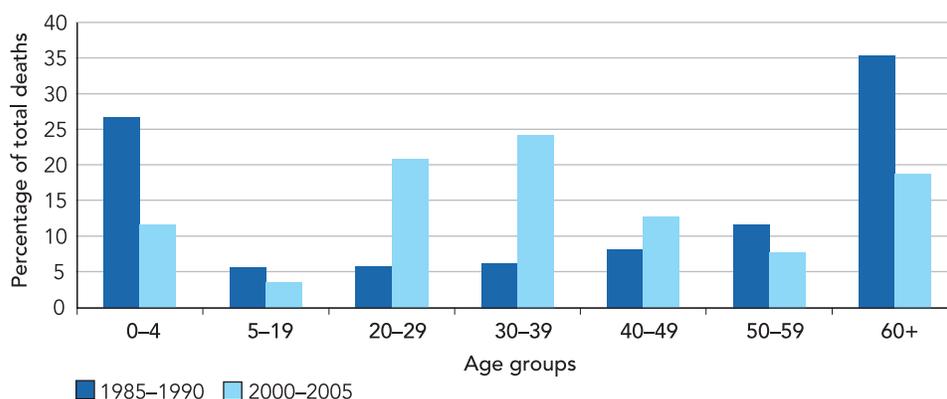
Outside of sub-Saharan Africa, in regions with lower HIV prevalence, AIDS has slowed rather than reversed gains in life expectancy. It is estimated that life expectancy in Cambodia is currently four years lower than it would have been without AIDS.

In the Americas, Caribbean countries have the highest HIV infection levels. AIDS has become the leading cause of death in Haiti among adults between the ages of 15 and 44. Life expectancy in the Dominican Republic is estimated to be three years lower than it would have been in the absence of AIDS. In Trinidad and Tobago, a country which is already losing population to out-migration, AIDS mortality is expected to reduce the overall population by 2010 (Stanecki, 2004; World Bank, 2005a).

Current projections of the long-term demographic impact of AIDS are somewhat less severe than in previous reports. This is partly due to revised HIV prevalence and AIDS mortality estimates for some countries and partly because

FIGURE 4.2

Percentage of distribution of deaths by age in southern Africa, 1985–1990 and 2000–2005



Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat (2005). World Population Prospects: The 2004 Revision. Highlights. New York: United Nations.

projections now assume that antiretroviral therapy will reach increasing numbers of people in hard-hit regions. However, this assumption carries a big “if”: it will only be realized if sustained progress is made towards universal access to—and wide-spread uptake of—a comprehensive range of prevention, treatment and impact-mitigation measures.

### Poverty and inequality

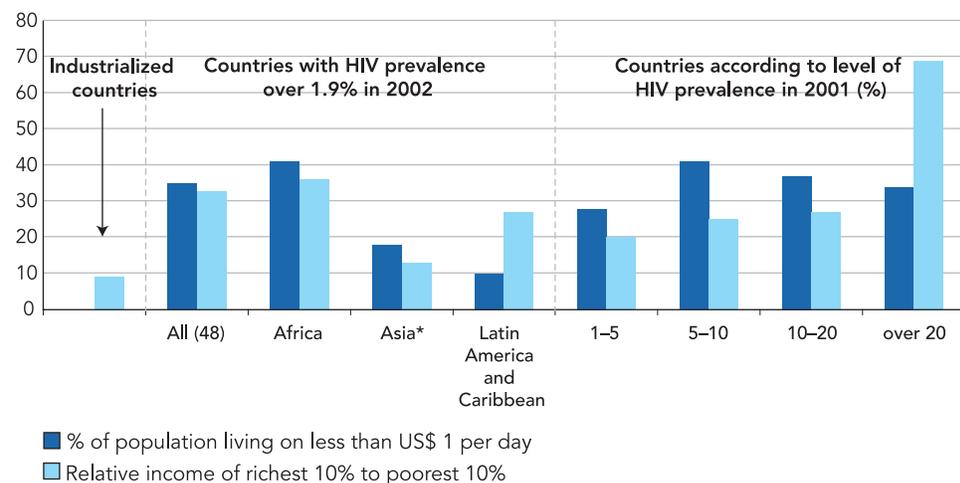
The relationship between AIDS and poverty is a powerful but nuanced one. Living standards of poor people in some of the hardest-hit countries were being eroded before the impact of AIDS was felt, and the worst-hit countries today are not necessarily the poorest. Southern Africa, with the world’s highest HIV prevalence, includes the most economically developed countries in sub-Saharan Africa. Generally, these countries have higher levels of education, gross domestic product and access to water and sanita-

tion than other parts of the continent. However, they also tend to have greater economic inequality and large numbers of people living in poverty, both of which have been clearly associated with HIV transmission.

This is illustrated in Figure 4.3. In the most-affected countries (prevalence over 20%—all in southern Africa), the richest 10% of the population have revenues that are almost 70 times those of the poorest 10% of the population. This compares with much lower disparities or ratios of between 20 and 27 in countries with lower prevalence. On average, one-third of the population in the most-affected countries with high income disparity lives on less than US\$ 1 per day—a large proportion, given their relatively high gross domestic product (UN Population Division, 2005a).

AIDS tends to affect the poor more heavily than other population groups. In Botswana, it is estimated that, on average,

**FIGURE 4.3** Wealth, poverty and HIV: countries grouped by region and HIV prevalence



\*Except Japan  
Source: United Nations Population Division (2005a). Most figures relate to 2002, or earlier.

every income earner is likely to acquire one additional dependent over the next 10 years due to the epidemic. But families in the poorest quartile will acquire an additional eight people who will become dependent on their income as a result of AIDS. Moreover, a “dramatic” increase in destitute households—those with no income earners—is predicted (Greener, 2004). Similar findings apply to India, where a review of economic research on AIDS concluded that households belonging to the poor and less educated or unskilled groups, as well as female members of households, face a proportionately greater economic burden due to AIDS (Mahal and Rao, 2005).

Governments are increasingly recognizing the importance of tackling poverty as a response to AIDS and tackling AIDS as a means of reducing poverty, but they have been slow in translating this into programmes. A 2004 review of the Poverty Reduction Strategy Papers and National Strategic Plans on AIDS of 19 African countries showed that most governments remain focused on health-sector responses. Only 16% of the papers reviewed included a clear discussion of the link between AIDS and poverty, and 42% did not analyse the issue at all (Bonnell et al., 2004).

#### HOUSEHOLD IMPACTS

Implications of having ‘AIDS in the family’ have been documented in many parts of the world. They range from increased medical costs and expenditures on funerals to withdrawal of family members from work or school to look after those who are ill. Research in New Delhi, India, found that average monthly expenditures exceeded income among families of people living with HIV, partly because of a doubling in purchases of

medicines. While these families spent less on entertainment and on children’s education to cope with rising care, support and treatment costs due to HIV, most were also forced to sell assets and borrow from friends and relatives (ILO, 2003).

Coping strategies also vary from place to place. For example, Rwandan households that have experienced an adult death are more likely to replace the lost labour by adding new family members (e.g. through marriage or bringing in young relatives) than those in Kenya and Mozambique (Gillespie and Kadiyala, 2005). Whatever the country, much depends on the age, gender and position of the family member who becomes ill or dies.

A recent study in northern Zambia explores the dynamics of the impact of HIV-related illness on families and communities, comparing five household categories: female-headed households with orphans; male-headed households with orphans; female-headed households taking care of people with HIV-related illness; male-headed households taking care of people with HIV-related illness; and non-affected households. Among other conclusions, the study found that female-headed households taking care of people living with HIV supported an average of 3.6 orphans each, far more than male-headed households. They were also ‘food-insufficient’—that is, they had less food than they needed—for an average 3.4 months per year. Few households taking care of HIV-positive people were able to participate in cooperatives—the main source of loans for agriculture—because of financial constraints or lack of time. Female-headed households taking care of HIV-positive people were less able than others to participate in community-based organizations and had

**"COPING" IN QUESTION**

Statistics cannot convey the countless examples of domestic heroism by AIDS-affected families. Research in countries such as Kenya, Malawi, Rwanda and Zambia suggests that family structures in sub-Saharan Africa are more resilient than many in the international development field had expected. Instead of disintegrating in the face of AIDS, many families are finding ways to make a living, feed and educate their children, and care for the ill—although frequently at great cost, stress and sacrifice.

But coping strategies should be examined critically. As one commentator puts it (Marais, 2005):

*[T]o describe as "coping" the activities of households sunk in impoverishment is to unmoor the discussion from ethics. By any humane definition of the word, such households are not "coping"; a "successful coping strategy" becomes an oxymoron. Regaining a precarious and chronically insecure form of household "viability" cannot reasonably be declared a success.*

Societies can only be pushed so far, and other threats—armed conflict, famine, market disruption—can easily combine with AIDS to drag large numbers of families deeper into poverty, break them up and deprive their members of the care and support they desperately need.

fewer assets such as axes, radios and bicycles—often because of distress sales and property grabbing by other community members (FAO, 2004). These findings concurred with studies from other countries showing that the heaviest impact of AIDS tends to fall on widows and their family members (Aliber et al., 2004).

**The weight of stigma and discrimination**

Stigma and discrimination are not only obstacles to HIV prevention, care and treatment for people living with HIV, but are among the epidemic's worst consequences. HIV-related stigma consists of negative attitudes towards those infected or suspected of being infected with HIV and those affected by AIDS by association, such as orphans or the children and families of people living with

HIV. Discrimination, as defined by UNAIDS Protocol for Identification of Discrimination against People Living with HIV, refers to any form of arbitrary distinction, exclusion or restriction affecting people because of their confirmed or suspected HIV-positive status. Both place a burden on human development by denying hundreds of thousands of people the chance of reaching their full potential.

HIV-related stigma and discrimination are found in all parts of the world, but their manifestation varies from place to place. Half the participants in a study in an eastern Chinese coastal city believed that punishment was an appropriate response towards those living with HIV, over half (56%) were unwilling to be friends with HIV-positive people and 73% thought that those living with HIV should be isolated. Stigmatizing attitudes tended to

be associated with being male, older, married, less educated and unwilling to be tested for HIV (Lee et al., 2005). Such attitudes have serious implications.

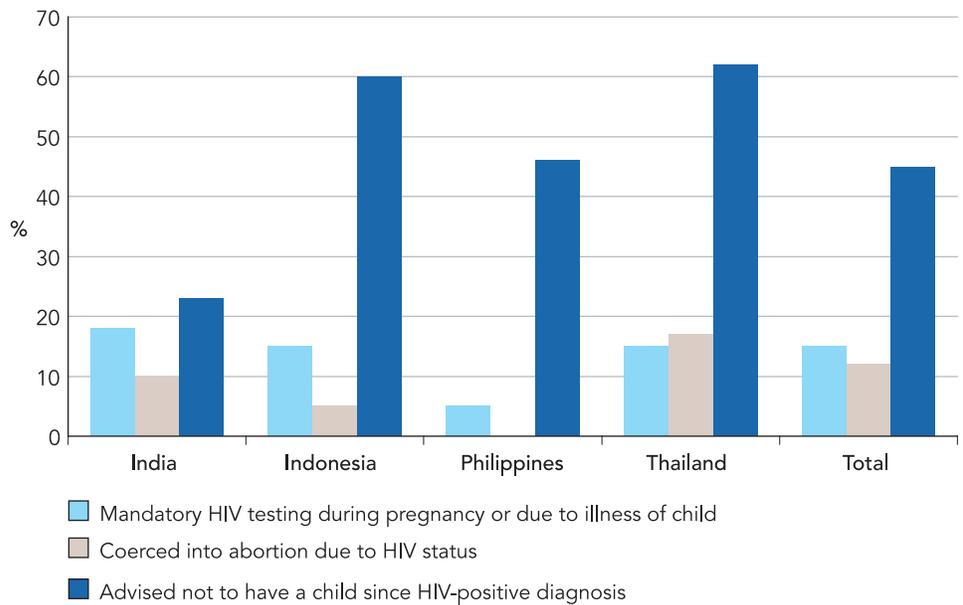
Research in other parts of the country shows that to avoid stigma and discrimination, some HIV-positive people refuse to get information about HIV and sexually transmitted diseases, staying away from health-care professionals and shunning those suspected of risk behaviour in an effort to blend in with community norms (Lieber et al., 2005).

HIV-related stigma is frequently conflated with negative attitudes towards marginalized groups and may be reinforced by legislation and legal systems that attack basic human rights (see ‘At risk’ chapter). A recent review of World Bank HIV programming in the Caribbean said (World Bank, 2005a):

*The legal framework of the English-speaking Caribbean actually perpetuates stigma and discrimination against some high risk groups, particularly MSMs [men who have sex with men] and CSWs [sex workers]. Homosexual behaviour is illegal in every country visited as is prostitution. Nevertheless, there are growing signs of recognition of the consequences of such legislation. The Bahamas recently decriminalized homosexual behaviour and a more inclusive attitude toward PLWHAs [people living with HIV] was described in most—but by no means all—countries.*

In 2005, the Asia Pacific Network of People Living with HIV/AIDS (APN+) reported on a study it carried out in India, Indonesia, the Philippines and Thailand. Over half of the 762 HIV-positive people in the survey reported experiencing some form of discrimination from health-care systems, including violations of women’s reproductive rights (see

**FIGURE 4.4** Violations of reproductive rights—women surveyed in four Asian countries



Source: Paxton S et al. (2005). AIDS-related discrimination in Asia.

*As reflected in Millennium Development Goal 3, one of the main tasks in human development is to reduce and eventually eliminate inequality between men and women by empowering women.*



Figure 4.4). People who reported coerced testing were significantly more likely than other respondents to face subsequent HIV-related discrimination, and many were refused treatment after being diagnosed with HIV. Within the family and the community, women were significantly more likely to experience discrimination than men, including ridicule and harassment, physical assault and being forced out of their homes (Paxton et al., 2005).

Stigma can persist even when treatment becomes readily accessible. In Brazil, where antiretroviral therapy is universally available, many HIV-positive children and youth still face significant stigma (Abadia-Barrero and Castro, 2005). In Botswana, where free antiretroviral therapy, infant formula and safe drinking water are widely available, stigma was given as the reason why over half of the pregnant women in a study did not feed their babies with formula—an important means of preventing mother-to-child transmission of HIV but one that in many settings clearly announces a mother's HIV status (Shapiro et al., 2003).

### Impact on women

As reflected in Millennium Development Goal 3, one of the main tasks in human development is to reduce and eventually eliminate inequality between men and women by empowering women. Effectively responding to AIDS can play a key role in achieving this task.

Women in sub-Saharan Africa are infected more often and earlier in their lives than men. Young women aged 15–24 are between two and six times as likely to be HIV-positive than men of a similar age. This evens out in older age groups, but it highlights the vulnerability of young women and girls and unequal power relations in many societies.

A similar pattern is found in parts of the Caribbean. In the Dominican Republic, young women aged 20–24 are almost twice as likely to be HIV-positive as young men (Measure DHS and ORC Macro International, 2002). However, in Latin America, eastern Europe and central Asia, young men are most likely to be infected—although this is changing as HIV increasingly affects the general population.

## REFUGEES, DISPLACED PERSONS AND THEIR HOST COUNTRIES

In 2005, the global number of refugees and displaced people stood at 19.2 million. Many of them reside in countries where health services are heavily burdened by HIV and AIDS. Approximately four million live in sub-Saharan Africa, where drought and conflict continue to force people from their homes in massive numbers.

A variety of stigmatizing myths surround the issue of AIDS and displaced populations. For example, host-country citizens commonly assume that these people 'bring AIDS with them'. In fact, the reality is more complex. Many refugees and other displaced persons flee countries with lower HIV prevalence to more stable countries with higher prevalence. For example, sentinel surveillance among pregnant women in refugee camps in Kenya, Rwanda and United Republic of Tanzania found that the refugees had lower (though still significant) levels of HIV infection than the surrounding populations (Spiegel, 2004; Griekspoor et al., 2004).

As a recent review of humanitarian aid projects points out, it is urgent that the HIV-related needs of refugees and displaced populations be met for the good of both the newcomers and the host population (UNAIDS/UNHCR, 2005).

Many countries are already overburdened by the impact of AIDS, and are often unable or unwilling to provide these populations with the HIV-related services they require. This places many refugees in a unique situation. They are no longer guaranteed the protection of their country of origin, they often do not have the assistance of the country of asylum and they go without the HIV-related services which they need and to which they are entitled under international human rights instruments. This failure to provide HIV prevention and care to refugees not only undermines effective HIV prevention and care efforts, it also hinders effective HIV prevention and care for host country populations. Since refugee populations now remain on average in their host country for 17 years, the implications for both refugee and host populations are very serious. Addressing HIV-related needs in the context of refugee situations requires a change in the thinking of the authorities in many countries of asylum. It is impossible to determine the actual length of time that refugees will remain in the host country. However, it is critical that during this time both refugees and surrounding host populations receive all necessary HIV-related services, including those that require long-term funding and planning.

## GENDER, MORTALITY AND FERTILITY

Although in most parts of the world women live longer than men, AIDS has driven female life expectancy below that of men in four countries: Kenya, Malawi, Zambia and Zimbabwe (UN Population Division, 2005b). Empirical evidence supports the existence of gender differ-

ences in mortality. For example, a recent three-year study in Zambia, which involved almost 19 000 people between the ages of 15 and 59, found that 61% of all deaths (i.e. for any cause) occurred among women, and that women on average died at younger ages than did men (Chapoto and Jayne, 2005).

HIV affects women's fertility, reducing it as much as 25–40%. This may be for a variety of reasons, from coinfection with other sexually transmitted infections to increased rates of spontaneous abortion (UN Population Division, 2005a). Fertility rates may also be affected in the future as more and more HIV-positive women gain access to HIV testing and counseling and, knowing their serostatus, will be able to make informed decisions about child-bearing. For the moment, however, the majority of HIV-positive women do not know their status, and even if they did, many could not change the behaviour of their partners or take steps themselves to protect their partners or prevent pregnancy.

The gender inequality that is imbedded in many cultural traditions means that the domestic burden of AIDS care falls especially heavily on women because of their traditional roles as carers and homemakers, deeply engrained social attitudes and insufficient social services. Caring for family members affected by AIDS is a compassionate undertaking, but it is also a burden that can limit educational and

economic opportunities for women and girls.

#### STIGMATIZING ATTITUDES

Stigma attaches itself strongly to women because of negative assumptions made about sexual risk behaviour—even when a woman has not engaged in any—and its association with HIV. A recent four-city study in India found that while almost 90% of the HIV-positive women were infected by their husbands, they faced more stigma and discrimination than men and were often blamed for their husbands' illnesses. Women living with their husband's family frequently faced expulsion if the husband died, and many had trouble finding anyone to care for them when they themselves became ill (ILO, 2003). This is common in other regions as well.

The impact on women from marginalized groups can be especially harsh. In the Russian Federation, HIV prevalence is relatively high among female injecting drug users, yet these women are the least likely to access health services, both because of stigma by health-care

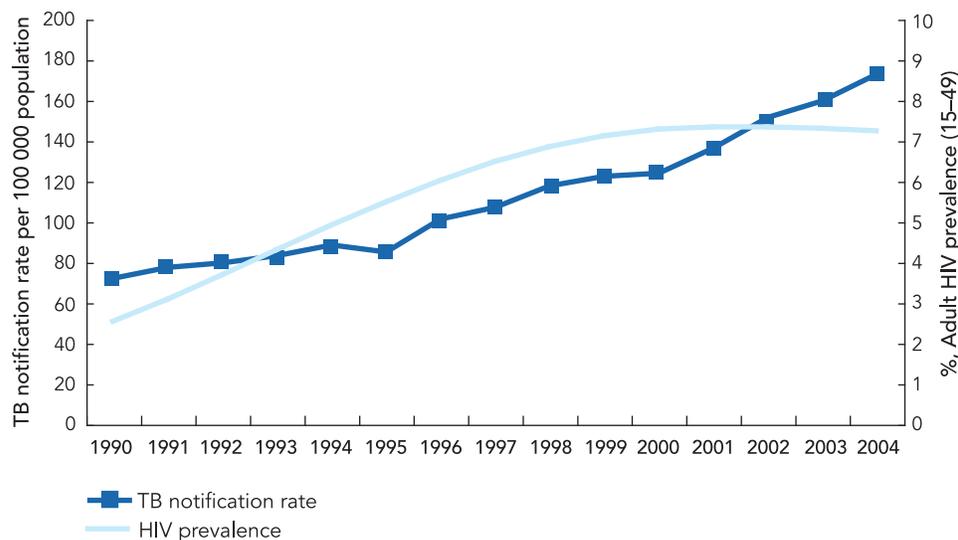
#### MAKING POOR HEALTH EVEN WORSE

AIDS has had a powerful impact on other epidemics. For example, AIDS is the primary force behind the global resurgence of tuberculosis. After falling for the previous two decades, new tuberculosis cases have climbed drastically since 1990 throughout sub-Saharan Africa, fuelled by the simultaneous rise in HIV infection (see Figure 4.5). In the Caribbean, tuberculosis is now the number one killer of people living with HIV (CAREC/PAHO/WHO, 2004).

Less well known is the fact that HIV infection impairs antimalarial immunity (Mount et al., 2004). In areas where malaria is endemic, HIV infection increases the risk that an individual over five years of age will become infected with malaria and experience malaria-related diseases. In five southern African countries, the WHO estimates that high HIV prevalence in rural areas increased malaria incidence by 28% and more than doubled the malaria death toll (Korenromp, 2005).

FIGURE 4.5

TB notification rate in 20 African countries\* versus HIV prevalence in sub-Saharan Africa, 1990–2004



\*Consistently reporting each year: Algeria, Angola, Botswana, Cameroon, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Ghana, Guinea, Kenya, Malawi, Mauritius, Mozambique, Nigeria, Senegal, South Africa, Uganda, United Republic of Tanzania, Zimbabwe  
Sources: World Health Organization (2006); Global TB database; UNAIDS (2006).

providers and because of the chaotic lifestyles that made them vulnerable in the first place. Reluctant to attend antenatal services when pregnant, these women frequently learn their serostatus only when they go to hospitals to give birth and are much more likely to abandon their newborn children on learning their status—often in the hope that the child will have a better life without them (Intigrinova and Hauslohner, 2004).

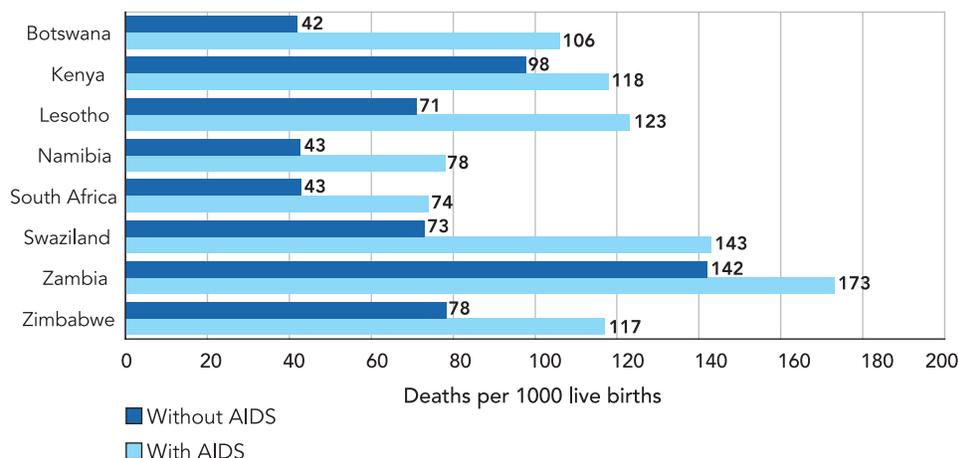
### Impact on children

The impact of AIDS on children continues to mount in various parts of the world. Currently, children under 15 account for one in six AIDS-related deaths worldwide and one in seven new HIV infections—the vast majority through mother-to-child transmission of

the virus (UNICEF, 2005). Figure 4.6 illustrates the extent to which AIDS has increased the proportion of deaths per 1000 live births in eight of Africa's hardest-hit countries.

After illness and death itself, the harshest impact on children is the loss of their parents' affection, support and protection. The likelihood of a parent becoming infected if the other parent unknowingly has HIV rises over time. The emotional shock of losing one parent may be inexorably followed by the death of the other. Separation from siblings is frequent as orphans from large families are often sent to live in different households. In addition to the psychological trauma suffered by these children, poverty and social dislocation, as well as stigma and discrimination, may also be added to their woes and in turn increase their

**FIGURE 4.6** Estimated impact of AIDS on under-five mortality rates 2002–2005, selected countries in sub-Saharan Africa



Source: UNICEF (2005). United Nations Population Division, World Population Prospects: The 2004 Revision, database.

vulnerability to HIV. Furthermore, countless children coping with the impact of HIV-related illness on their families become responsible for the care of their siblings and other family members when parents are debilitated by poor health.

In sub-Saharan Africa, approximately 9% of children under the age of 15 have lost at least one parent to AIDS, and one in six households with children is caring for at least one orphan. (A maternal or paternal orphan is a child who has lost one parent—mother or father, respectively—while a double orphan has no living parent.) To date, prevailing families are considered to have coped remarkably well with this, with 90% of double orphans being taken in by their extended family (Monasch and Boerma, 2004). But this statistic does not account for the huge variation in living conditions experienced by these children, and it still leaves millions of children being cared for by strangers—or by no one.

A recent analysis of household surveys from 40 sub-Saharan African countries

found that, on average, orphans are more vulnerable than other children, according to several indicators (Monasch and Boerma, 2004). Patterns differ between countries and regions, but in general, orphans are more likely to live in households that are female-headed, larger and have more people dependent on fewer income-earners (that is, less favourable dependency ratios). As seen in Figure 4.7, education is significantly affected, with orphans being about 13% less likely to attend school than non-orphans (34 countries).

Some of this may be because of the additional financial burden or workload taken on by caregiver households. However, a study of 10 sub-Saharan African countries found that orphans are less likely to attend school than non-orphans living in the same household, indicating that much depends on the closeness of the ties between the orphan and the head of the household (Case et al., 2004).

Overall, paternal orphans are more likely to live with their mothers than maternal

**FIGURE 4.7** Impact of orphanhood on school attendance among 10–14-year-olds (%)

| Percentage in school   | WEST<br>(9 countries) | CENTRAL<br>(6 countries) | EASTERN<br>(9 countries) | SOUTHERN<br>(10 countries) | ALL<br>(34 countries) |
|------------------------|-----------------------|--------------------------|--------------------------|----------------------------|-----------------------|
| Non-orphans            | 67                    | 75                       | 70                       | 88                         | 74                    |
| Orphans                | 58                    | 69                       | 54                       | 84                         | 69                    |
| Double orphans         | 57                    | 58                       | 49                       | 80                         | 64                    |
| <b>Ratios</b>          |                       |                          |                          |                            |                       |
| Double vs. non-orphans | 0.86                  | 0.94                     | 0.72                     | 0.90                       | 0.87                  |
| Boys                   | 0.96                  | 0.96                     | 0.82                     | 0.93                       | 0.94                  |
| Girls                  | 0.91                  | 0.94                     | 0.88                     | 0.96                       | 0.93                  |

Source: Monasch R and Boerma JT (2004). Orphanhood and childcare patterns in sub-Saharan Africa: an analysis of national surveys from 40 countries, AIDS 2004, 18 (Suppl 2): S55-S65.

orphans are to live with their fathers. An orphan's attendance in school can depend on which parent has died. In Zimbabwe, a study found markedly low primary school completion rates among children who had lost their mothers. This is partly because of a lack of support from fathers (many of whom are absent for employment reasons) and stepmothers' reluctance to care for their stepchildren. School completion was higher among paternal orphans and double orphans, particularly girls (Nyamukapa and Gregson, 2005). A similar study involving 20 000 Kenyan children found that school participation rates fell by an average of 5% after a parent's death, but the decrease following a maternal death was more than twice that of a paternal death (Evans and Miguel, 2005).

Although the number of orphans and vulnerable children is proportionately smaller outside of Africa so far, the impact on individuals is harsh. As mentioned earlier, children born to HIV-positive mothers in the Russian Federation (and in other countries of the Commonwealth of Independent States such as Ukraine) are frequently abandoned by their mothers. Of the 13 000 children born to HIV-positive women by the end of 2003, about one in twenty was left in state care or simply aban-

doned. Unlike their counterparts in Africa, these children are rarely adopted or placed in family care. Most grow up in state institutions and children's homes, while some spend the first years of their lives in hospitals—often being physically, emotionally and intellectually stunted as a result (Intigrinova and Hauslohner, 2004). Fortunately the proportion of HIV-positive mothers who abandon their infants is falling. This is partly a reflection of increasing HIV incidence among women in the general population who are likely to have more support in their lives than injecting drug users; as well, this is also due to the fact that HIV-positive women in general are becoming better informed about mother-to-child transmission of HIV (Voronin et al., 2005).

### Governments and governance

In countries with high levels of HIV prevalence, the epidemic is having a serious impact on public-service sectors. At the same time as productivity and tax bases are being constrained by the deaths of adults in their productive prime, AIDS is placing increasing demands on public-sector services, such as health and education, and on public administration (Grant et al., 2004).

### ELDERLY CAREGIVERS

The burden of care for HIV-positive adults and for children orphaned by AIDS frequently falls on elderly people—many of whom are poor and do not benefit from social protection measures such as state pensions. In Thailand's Chiang Mai province, a recent study of children who have lost one or both parents to HIV-related illnesses found a large proportion of children being cared for by grandparents and other extended family members. Many of these carer families suffered significant financial hardship, highlighting concerns about the children's long-term well-being, stability and educational opportunities (Safman, 2004). Similarly, in rural United Republic of Tanzania, Uganda and Zambia, grandparents are the primary caregivers for over one-third of orphans (Deininger et al., 2003). As well as providing care, they may also find themselves responsible for other costs such as debts incurred during HIV-related illness or paying funeral bills. This results in financial and physical hardship, compounded by grief for the deceased and worry about the future of the living (Schatz and Ogunmefun, 2005).

Concerns are growing about the long-term effects on the continuity and quality of public services and governance, with the significant destruction of 'institutional memory'. For example, a government ministry can likely accommodate the one-time loss of 2–3% of staff (that is, staff lost during a single year, above normal losses due to retirement, non-AIDS deaths, etc.) by increasing recruitment or reassigning staff internally. If, however, 25% of staff beyond normal turnover is lost cumulatively to AIDS over 10 years, the change in age composition and the loss of staff experience and expertise may seriously impair that institution's effectiveness and efficiency. For example, a reduction in the number of candidates for senior management positions may result in less experienced or less qualified individuals being appointed, with a likely erosion of the quality of decision-making (Haacker, 2004).

AIDS can have a negative effect on political participation and other aspects of democratic government, although research on this is scarce (de Waal, 2005).

Possible effects include declining involvement in voluntary organizations and local politics (due to death, illness or demoralization), absenteeism and death of elected representatives, and a shift from debating long-term issues of democracy and human rights to focusing on more narrow and immediate issues of service provision (Manning, 2002; Marais, 2005; Strand et al., 2004).

### SECURITY AND ORDER

Rights-based security and order are important parts of creating an environment in which human development can flourish, and the epidemic's impact on police forces and the military is of considerable concern in some countries. Mozambique has trouble recruiting and training enough police officers to replace those dying of AIDS-related illnesses, while in Ethiopia a 2004 study of police officers' wives found that about one-third were living with HIV (Garrett, 2005).

A recent global review of AIDS and national security found that high-ranking officials around the world are concerned

about levels of prevalence within the uniformed services and among new recruits. In Africa, Zimbabwe's armed forces suffered a serious blow in 2004 when one-third of army officers sent to China for advanced training were expelled after being diagnosed as HIV-positive (Garrett, 2005). Across the Commonwealth of Independent States, notably in the Russian Federation and Ukraine, armed forces are having some difficulty finding enough healthy recruits to maintain their ranks. This situation may become even worse: declining birth rates in the late 1980s and early 1990s and high rejection rates among recruits due to poor military fitness threaten the Russian Federation's goal of maintaining a million-man army (Frolov, 2004).

### Health services

A strong health system is a vital component in any country's response to AIDS and a key stepping stone in development. Yet, in the hardest-hit countries, the epidemic is undermining health services in a variety of ways. These range from the deaths of already scarce health-care workers to the additional numbers of people needing beds

in already understaffed and underfinanced hospitals and clinics.

For example, Botswana lost approximately 17% of its health-care workforce due to AIDS between 1999 and 2005. In Zambia, an estimated 40% of midwives in Lusaka are believed to be HIV-positive (ILO, 2004), while 16% of a sample of public and private health-sector workers in four South African provinces were living with HIV in 2002. Among younger health workers (aged 18–35), the estimated prevalence was even higher at 20% (Shisana et al., 2004).

The epidemic is placing unprecedented burdens on the scarce health-care resources that currently exist. People with HIV-related diseases occupy more than half of all hospital beds in sub-Saharan Africa. Excessive workloads, compounded in many cases by fear of infection due to the absence of standard infection-control practices in many health-care workplaces, are causing many to leave the health profession altogether.

Increased access to antiretroviral therapy will give back years of good-quality life to millions of people living with HIV



*The epidemic is placing unprecedented burdens on the scarce health-care resources that currently exist.*

*Currently, only 64% of children in Africa and 83% of children in south and west Asia are enrolled in primary school.*



who would otherwise die, yet this will also put additional pressure on health services already under great strain. In the United Republic of Tanzania, for instance, the health-sector workforce has been significantly reduced by structural adjustment policies since the 1990s and has itself been struck heavily by AIDS. Yet the need to expand the sector is urgent. A WHO mission to the country has calculated that delivering antiretroviral therapy to everyone needing it would take the full-time services of almost half the existing health workforce (ILO/GTZ, 2004).

The implications for the hardest-hit countries are obvious, but the threat also applies to countries with much lower prevalence. In Viet Nam, a recent assessment suggests that by 2007, HIV and AIDS may absorb nearly 5% of all public health spending, if spending meets the level required to provide a comprehensive response to the epidemic. Although donor assistance can offset some of this spending, “financing the necessary prevention, care and treatment services will test the commitment, capacity, and will of the Vietnamese economy” (UNDP, 2003a).

In India, the epidemic could have a severe impact on the poorest citizens’ access to health care. Health insurance, both public and private, currently covers only 15% of the population, and the public health facilities available to the poor are underfunded and understaffed. As India increases the availability of anti-retroviral therapy, the additional workload and increase in costs will fall most heavily on public facilities, as increasing numbers of poor people living with HIV begin to seek treatment (Mahal and Rao, 2005).

### Impact on education

Education is one of the pillars of development, and providing universal access to primary education by 2015 is a target of both the Millennium Development Goals and the Education For All (EFA) Initiative (UNESCO, 2000). The latest UNESCO report on progress towards the EFA goals set at the World Education Forum in Dakar in 2000 indicates that, despite steady improvement, current rates of progress in school enrolments need to quadruple in sub-Saharan Africa and double in south Asia to reach the 2015

goal. Currently, only 64% of children in Africa and 83% of children in south and west Asia are enrolled in primary school (UNESCO, 2006).

Over half the countries considered unlikely to meet the 2015 goal are among the most AIDS-affected. UNESCO states unequivocally that, along with armed conflict and high fertility rates, “HIV/AIDS is a major global constraint on the provision of good-quality education” (UNESCO, 2005).

Although prevalence and death rates vary greatly, in some countries the impact of AIDS on teaching staff is critical. The United Republic of Tanzania needs around 45 000 additional teachers to make up for those who have died or left the system because of AIDS. The greatest proportion of these, according to the Tanzania Teachers’ Union, constituted highly experienced staff in the 41–50 year age group (ILO/GTZ, 2004).

South Africa’s education system is struggling with a variety of problems. Although the number of school-age children (6–18-year-olds) has been increasing, enrolment has been falling.

This is attributed to a variety of factors, including an increase in the proportion of vulnerable children (notably orphans and girls) whose access to school is restricted. At the same time, the total number of public school teachers is declining; between 1998 and 2003, the net reduction was over 5%. Along with retirement, resignation and emigration of teachers, death while in service was one of the main factors in this decline. AIDS accounts for much of this. HIV prevalence among South African teachers is 21% among those aged 25–34 and 13% among those aged 35–44. At the same time, the number of people graduating from teacher training is declining (Peltzer et al., 2005).

### The world of work

Because it most frequently strikes adults in the prime of their working years, HIV poses a threat to the economic growth and development of millions of people employed in the informal sector (also known as the ‘informal economy’). The impact is widespread and complex: consumption is reduced, profits are foregone, tax revenue and investments are

### IMPACT ON EDUCATION QUALITY

One of the main concerns of the Education For All initiative is that the quality of education offered to children should be of a high standard. Here, too, HIV is having a serious impact as illness progressively affects the ability of teachers to teach, learners to learn and managers to manage the school system effectively and efficiently. In the Zambian school system, the illness of teachers or their responsibilities of caring for family members (including attending family funerals) accounts for over 60% of teacher absences. Strikingly, a survey carried out among teachers of year 5 mathematics and English found that a 5% increase in a teacher’s rate of absence reduced students’ average gains in learning by 4–8% per year. This results not only from the teacher’s absence but also from the indirect impact of less lesson preparation and lower teaching quality when teachers actually do work (Das et al., 2005).

### COUNTING THE COST—AND TAKING ACTION

Singareni Collieries is a major employer in Andhra Pradesh, one of India's states with the highest HIV prevalence. The colliery, which supplies about 10% of the country's coal and employs over 93 000 people, sought to understand the current and potential impact of the epidemic on its staff and operations. Having estimated that approximately 2% of the workforce were currently HIV-positive (slightly higher than in the local population as a whole), the study calculated a variety of costs that will accrue over the following years such as loss of production, medical expenses, insurance costs and expenditure on employee replacement in cases of illness or death. Among other findings, the study found that if workers were untreated, the cost of compensating them as their illnesses progressed over 10 years would reach US\$ 21 million, if workers were not treated. In contrast, provision of antiretroviral therapy over the same period—thereby prolonging the working life of the employees and permitting them to sustain their families—would amount to only US\$ 1.24 million. In response to these and other findings, the company has implemented a variety of HIV and sexually transmitted infection prevention measures, and it is currently exploring with the government, unions and local nongovernmental organizations a variety of options for providing care and treatment to HIV-positive workers (ILO, 2005).

lost and essential services not delivered. Adults living with HIV, who would otherwise be generating income, supporting families and contributing to local and national economies, find themselves losing wages, jobs, savings and, eventually, their lives.

#### WORRIES IN THE BUSINESS COMMUNITY

Business, labour and government bodies have accumulated a growing body of research in recent years on the impact of AIDS on the world of work. It strongly supports the 'business case' for prevention, care and treatment.

The impact in the hardest-hit countries of southern Africa is already serious but is forecast to deepen over the coming decades. The South African Business Coalition on HIV and AIDS recently surveyed 1006 companies in the manufacturing, retail, wholesale, motor trade, and building and construction sectors and found that 9% had suffered a significant negative impact due

to AIDS. About one-third reported higher labour turnover rates, and one-quarter had incurred additional recruitment and training costs due to the epidemic. Regional impacts followed HIV prevalence levels closely, with just under 40% of companies operating in hard-hit KwaZulu-Natal and Gauteng reporting a negative impact on profits. While most of the larger companies surveyed have implemented AIDS policies and begun a variety of prevention and care interventions, only 13% of companies with fewer than 100 employees had a company policy in place (SABCOHA, 2004).

Balanced and sustainable economic growth over the long term will depend on many factors. For example, developing countries will need more foreign investment to grow their economies. However, the extent of the AIDS epidemic is one of the factors investors take into account when deciding whether to invest in a given country, and this works against the hardest-hit countries.



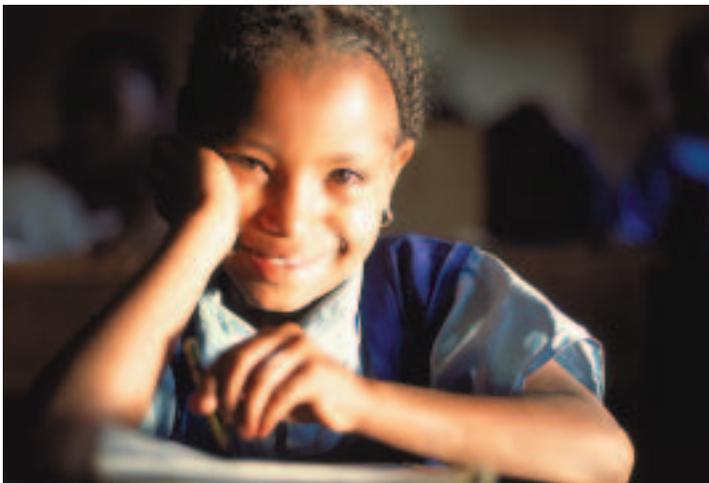
*Given the size and complexity of the informal sector in so many countries, AIDS can have far-reaching consequences on these workers, but the impact is difficult to track, prevent or mitigate.*

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#### THE INFORMAL SECTOR

Most developing countries have thriving informal sectors. They account for between 25% and 40% of gross domestic product in developing countries in Asia and Africa and can account for as much as 80% of non-agricultural employment in many countries (World Bank, 2005b). For example, informal employment is estimated to be 40% of total employment in Egypt, 69% in El Salvador, 14% in Russia and 23% in South Africa (Avirgan et al., 2005). In India, about 60% of informal workers are women (Treacy, 2003).

Given the size and complexity of the informal sector in so many countries, AIDS can have far-reaching consequences on these workers, but the impact is difficult to track, prevent or mitigate. ILO research in Ghana, South Africa, United Republic of Tanzania and Uganda in 2003 provides a great deal of information on the vulnerability of informal sector workers to HIV infection. For example, brewing and selling beer is an informal sector activity most often carried out by women and one to which women from HIV- and AIDS-affected households



*There is considerable evidence of a relationship between AIDS, orphanhood and increased levels of child labour, most of which occurs in the informal sector.*

often turn. The United Republic of Tanzania research showed a number of vulnerability factors associated with this activity, beginning with the fact that the majority of beer sellers were women and their main customers were men. The women were at increased risk of offering or being coerced into sex with customers in order to sell their beer (Mackay, 2003). The research highlighted the need for HIV prevention initiatives among informal sector workers in the four countries.

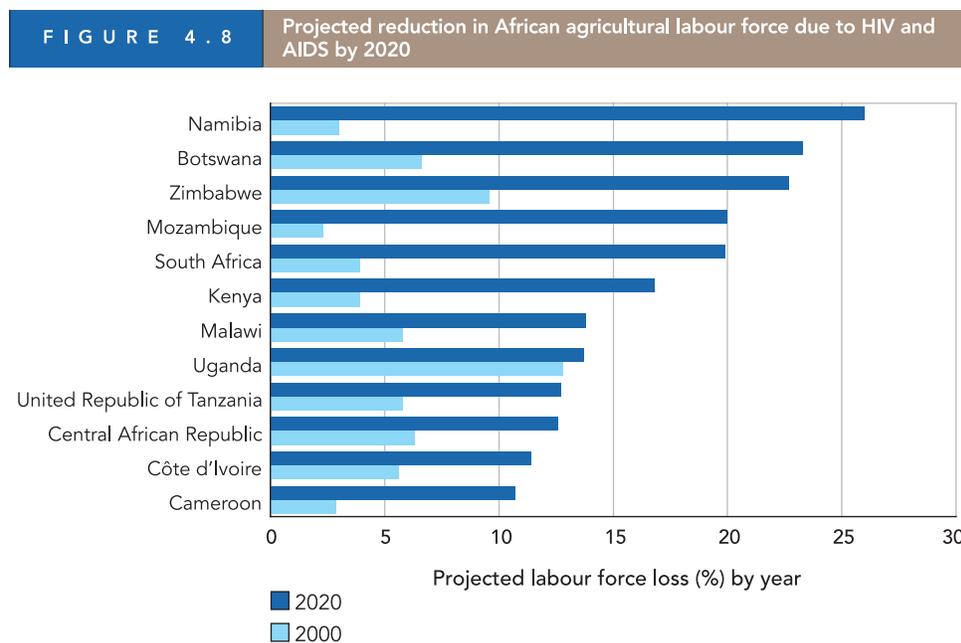
AIDS also affects existing antipoverty initiatives within the informal sector. Microcredit programmes, which frequently target people working in the informal sector, can be affected in a variety of ways by HIV-related illness. These range from reduced cash flow and higher transaction costs, as clients miss more and more payments, to illness among microfinance institution staff themselves (Murray, 2005). Mitigation efforts for the

informal sector are thus an important part of any national response to AIDS (see ‘Reducing the impact’ chapter).

There is considerable evidence of a relationship between AIDS, orphanhood and increased levels of child labour, most of which occurs in the informal sector. Much of this evidence comes from sub-Saharan Africa (ILO/IPEC 2003), but the relationship has also been established in other parts of the world. Research among AIDS-affected families in New Delhi found that not only were many children withdrawn from schools as a way to cope with decreasing incomes and increasing expenditures on medicines, but 17% of them had to take up remunerated jobs to contribute to their families’ financial stability (ILO, 2003).

**AGRICULTURE AND RURAL DEVELOPMENT**

Agriculture is essential to most developing countries to feed the majority of



Source: ILO (2004). HIV/AIDS and work: global estimates, impact and responses.



*As is generally the case, the worst impact tends to be on the poorest members of the population.*

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their citizens but also provides much of their export earnings. It is often the largest single source of employment.

By 2000, the agricultural workforces in 12 high-prevalence African countries were between 3% and 10% smaller than they would have been in the absence of AIDS, according to FAO estimates. (In Uganda, struck early by the epidemic, the figure was 13%.) As Figure 4.8 shows, by 2020 the loss could be over 10% in these countries and over 20% in Botswana, Mozambique, Namibia and Zimbabwe.

Agricultural workers feel the impact over years as the virus takes its course, reducing their attendance (not only because of illness but also due to caring duties and mourning periods for others who die), productivity and earning power. A recent study of workers in Kenya's tea industry illustrated this. Comparing tea pluckers who eventually stopped working because of HIV-related causes with other workers, the study quantified sick days, casual leave days and those spent doing less strenuous tasks. The impact on workers' wages was marked, as HIV-positive tea pluckers earned 16% less in their second-

last year of work and 18% less in their last year. It is possible that the impact was actually worse, since it was found that the affected workers often brought unrecorded 'helpers' to aid in the job (Fox et al., 2004).

As is generally the case, the worst impact tends to be on the poorest members of the population. A survey in Kenya found that relatively poor households in rural areas do not recover quickly when the head of a family dies; over the three-year life of the survey, reduced crop production and non-farm incomes did not return to pre-death levels. As in other countries, the sex of the deceased seriously affects the value of crops a family produces, since the death of an adult male reduces production of 'cash crops' (typically coffee, tea and sugar) while the death of an adult female more often results in reduced production of grain and other subsistence crops (Yamano and Jayne, 2004).

#### DEVELOPING ECONOMIES

While the impact of HIV and AIDS on individuals, families and communities can

### AIDS AND THE ENVIRONMENT

At first glance, Millennium Development Goal 7—ensuring environmental sustainability—has little to do with HIV and AIDS. Yet even here, the epidemic is having an impact. For example, a study of four fishing communities in Uganda found that not only were fishing families hit hard by illness, but fish stocks were being depleted as unskilled youth who were replacing sick fishermen did not know or ignored the traditions that have protected these communities' livelihoods for generations (Tanzam and Bishop-Sambrook, 2003).

Current research (FAO, 2004) shows the impact that HIV and AIDS is having on the Miombo woodlands, a vast ecoregion stretching through some of the African countries with the highest prevalence of HIV, including Angola, Malawi, Mozambique, United Republic of Tanzania, Zambia and Zimbabwe. Carried out in six communities in Malawi and Mozambique, the research found that the forest was an important source of medicinal plants used by people to deal with HIV-related symptoms (most often for diarrhoea, mouth and throat sores, rashes and fevers) and of food and fuel for HIV- and AIDS-affected families. Families that had suffered the death of one of their members (and thereby less able to afford fuel sources such as propane) were five times more likely than those unaffected to have increased their collection of firewood, denuding areas close to their settlements. A number of other threats were also emerging. For example, medicinal plant species were threatened by destructive harvesting methods and commercial harvesting of these plants by people outside the community. The findings point out the urgency of assessing impact on forests and response to minimize destruction (Barany et al., 2005; Siteo et al., 2004).

be huge, research on national economies has found relatively modest effects using measures such as annual gross domestic product. Studies focusing on sub-Saharan Africa place the net impact on gross domestic product to be around 1% yearly

(Bell et al., 2003), and figures are considerably lower for countries with lower HIV prevalence. Recent work has aimed at understanding longer-term impact and investigating the factors that will influence these impacts.