1. Introduction

For more than a quarter of a century, the AIDS epidemic has spread across the world. As it intensified in the 1990s, a growing number of studies documented aspects of its impacts on households, businesses and national economies. FAO conducted and supported numerous studies that provided examples of the impacts of HIV and AIDS on agriculture, food and nutrition security and rural livelihoods. Such analyses continue to influence policy and programmes.

There are signs that in the last ten years or so the epidemic has been stabilizing or declining in some of the heavily affected countries (UNAIDS, 2008). This does not necessarily mean that the disease burden (morbidity and mortality) and the socio-economic effects associated with AIDS have lessened significantly, but it is obvious that some of the epidemic's contexts (epidemiological, socio-economic, treatment and care) have been changing. The changing epidemiological context can be seen in a number of countries where the epidemic has moderated, with prevalence either stabilizing or declining. The changing treatment and care context is exemplified by the growing availability of antiretroviral (ARV) drugs and other services to test for HIV, suppress HIV viral load and improve the care of AIDS cases. These are allowing hundreds of thousands (and likely soon to be millions) of people to live longer and near-full productive lives. In terms of the socio-economic context, we see that in places where the epidemic is more mature and the impact has evolved over time, the burden may be different from when the epidemic was at its peak (Beegle *et al*., 2006).

This paper looks at the implications for agriculture and rural societies of the changing contexts of the AIDS epidemic. Very little work has been done on this topic, so the paper seeks to navigate uncharted waters with a view to identifying some likely implications for the agriculture sector in the next five to ten years. The paper is designed to stimulate discussion, not only about the implications of the future trends of HIV and AIDS, but also about adapting these implications for effective agricultural and rural development policies and programmes. Much of the focus is on East and Southern Africa, where the epidemic is generalized and its impact on the rural sector is clear. Where possible, examples are drawn from other regions as well. Many of the initial studies of rural societies and the impacts of HIV and AIDS were essentially short-term views from which many advocates drew long-range conclusions and generalizations. This was partly because, for many years, resources were concentrated on demonstrating the effectiveness of awareness and

education programmes. Only a handful of studies in the area of agriculture and food security were available, and most of these were initiated by FAO. It took several years of advocacy based on the limited information available to get the issue of AIDS and agriculture recognized as a legitimate area of concern. Thus, geographically limited and time-specific data were used to suggest longer-term consequences. A number of the worst scenarios that were suggested during the 1990s have not come to pass: national economies have not collapsed, rural communities have not imploded, and agricultural production has not stagnated. In many cases, either the projected intensity of the epidemic trajectory has not occurred or the cumulative impact on households and communities has been less intensive or extensive than had been estimated. Responses to the epidemic have been more flexible and diverse than had been anticipated by many researchers and analysts in the 1990s. At the same time, much of the impact has been born at the household rather than the national level. As shown in Table 1, cereal production in selected countries with generalized AIDS epidemics (more than 5 percent HIV prevalence among the adult population) actually increased throughout the years when HIV was at its peak.

TABLE 1 - CEREAL PRODUCTION IN COUNTRIES WITH GENERALIZED AIDS EPIDEMICS, 1989 TO 2004 (TONNES)

Country	1989–1991		1999–2001		2003		2004	
	Food production	Adult HIV prevalence[1]	Food production	Adult HIV prevalence[2]	Food production	Adult HIV prevalence	Food production	Adult HIV prevalence
Cameroon	890	1.3%	1 272	6.0%	1 584	5.7%	1 684	5.5%
Kenya[3]	2 958	3.9–5.2%	2 921	7.4-9.8%	3 351	6.0–8.0%	2 730	5.8–7.8%
Malawi	1 560	3.6%	2 336	13.3%	2 142	12.8%	1 843	12.5%
Mozambique	629	1.8%	1 591	10.3%	1 813	11.5%	2 007	11.9%
Zambia	1 467	11.8%	934	15.4%	1 365	15.2%	1 364	15.1%

[1] and [2] refer to adult (15 to 49 years) HIV prevalence in 1991 and 2001 respectively.

[3] Data currently available from the Joint United Nations Programme on HIV/AIDS (UNAIDS) give ranges of prevalence, as analyses are still being undertaken to incorporate data from a population-based survey into data from other sources.

Sources: FAO, 2004c; UNAIDS/WHO, 2008.

At household level, prolonged illnesses associated with HIV and AIDS sap household resources, and death adds to the losses. As well as a long period of economic pressure on households as the epidemic runs its course, this means that affected households may also find it difficult to recover from the impact and may thus become more dependent on welfare support from governments and non-governmental organizations (NGOs).

Recent studies are finding that the impacts of HIV and AIDS are more diverse than initially assumed (Wiegers, 2008). In addition, many households face similar livelihood problems regardless of whether or not they are affected by HIV and AIDS. These include inadequate incomes, limited income-generating options, food insecurity, and shortages of labour and land. Impoverishment and gender and class inequalities exacerbate the impacts of AIDS for some people in rural societies, but the levels of poverty are shared by many people, not only those affected by HIV and AIDS. In a study in southern Zambia, for example, there was only a minor difference between the incomes of affected and non-affected female-headed households (FAO/Farming Systems Association of Zambia, 2003: 27).

Less well understood are the complex determinants of household vulnerability to HIV and capacity to resist or recover from the impact of the disease. Less is also known about how the impacts of HIV and AIDS (and poverty) on households affect wider community relationships, operations, systems and structures (examples are explored in Chapter 3).

Central to addressing the implications of both HIV and AIDS is recognition of the following three interrelated factors:

- *Much still has to be learned about the socio-economic and institutional implications of the epidemic:* As a long-wave series of events, impacts may multiply and accumulate, particularly on households and communities, although both households and communities can also be highly adaptive and resilient to adversity. These realities lead to the second factor.
- *There are few, if any, clear and broadly generalizable findings applicable to all rural societies:* Instead, contradictions abound, making broad conclusions risky.
- *To identify the diversity of HIV and AIDS dynamics and responses in rural societies there is need for studies that are statistically representative, geographically diverse, localized, spread across numerous sections of society and covering months or years:* Follow-up studies will help to outline changes experienced in the wake of HIV and AIDS and other pressures on societies.

Current epidemiology

In its 2008 *Report on the global AIDS epidemic*, UNAIDS reported that 33 million people were living with HIV in 2007.[1] In that year alone, an estimated 2.7 million new infections occurred and an estimated 2 million people died of AIDS-related illnesses. Sub-Saharan Africa continues to be the region with the highest HIV prevalence. To illustrate this trend, Table 2 presents HIV prevalence figures for 2001 and 2007.

[1] In its 2007 figures, UNAIDS significantly reduced the total global numbers of HIV-infected people and of people newly infected with the virus. The changes were the result of more accurate survey data and various methodological changes/improvements (UNAIDS/WHO, 2007: 9–12).

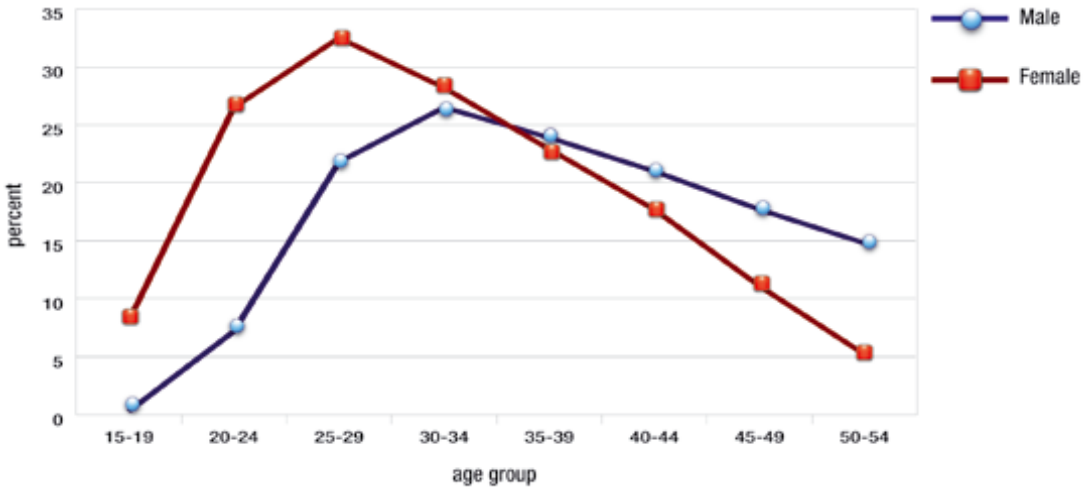
TABLE 2 - REGIONAL HIV FIGURES, 2001 AND 2007

	Adults and children living with HIV	Adult (15–49 years) prevalence	Adult and child deaths due to AIDS
Sub-Saharan Africa			
2007	22 million	5.0%	1.5 million
2001	20.4 million	5.7%	1.3 million
Middle East and North Africa			
2007	380 000	0.3%	27 000
2001	300 000	0.3%	22 000
South and Southeast Asia			
2007	4.2 million	0.3%	340 000
2001	4.2 million	0.4%	250 000
East Asia			
2007	740 000	0.1%	40 000
2001	490 000	0.1%	15 000
Latin America			
2007	1.7 million	0.5%	63 000
2001	1.4 million	0.5%	47 000
Caribbean			
2007	230 000	1.1%	14 000
2001	210 000	1.1%	15 000
Eastern Europe and Central Asia			
2007	1.5 million	0.8%	58 000
2001	650 000	0.4%	6 700

Source: UNAIDS, 2008.

The epidemic continues to be concentrated among younger adults, particularly young women, who tend to be two to five times more likely to be HIV-positive than young men in the same age group (Figure 1). In sub-Saharan Africa, more women than men are HIV-positive. Deaths from AIDS-related illnesses continue to increase in most countries in sub-Saharan Africa, Asia, and Eastern Europe and Central Asia, illustrating the sustained long-term cycle of the disease. UNAIDS' most recent analysis of country data indicates that HIV prevalence has decreased in rural areas in several sub-Saharan countries, although the decrease is not statistically significant (UNAIDS/WHO, 2007: 13) and the distribution of the epidemic across age groups has remained more or less static (Figure 1).

FIGURE 1 - HIV PREVALENCE BY AGE AND SEX, SOUTH AFRICA



Source: Dorrington et al., 2006.

Notwithstanding the mixed picture, there is growing epidemiological evidence that the epidemic has reached its peak in a number of countries, as is explored in more detail in Chapter 3. Several countries have witnessed a decline in HIV prevalence over the past five years or so. The growing availability of antiretroviral therapy[2] (ART) has reduced the number of deaths from AIDS-related illnesses.

The revision of total HIV infections and AIDS deaths by UNAIDS, and the actual decline or stabilization of infections mean that in many countries the epidemic appears less intense than had been estimated at the beginning of the twenty-first century. However, in many areas (such as eastern Democratic Republic of Congo, northern Uganda and southern Sudan), the situation remains hidden because of social and infrastructural difficulties. Even where HIV prevalence figures have been revised downwards, much remains to be learned about the impacts across societies.

Part of the challenge is knowing where and how the epidemic is evolving, both epidemiologically and in terms of impact, and what these changing contexts imply for food security and the livelihoods of rural households (Nombo, 2007; Wiegers, 2008). For example, little is known about the extent to which the death of one or both parents affects the transfer of agricultural and social knowledge to a younger generation. To date, many analysts have assumed that the knowledge link is broken, but the nature and degree of the loss of knowledge has not been adequately assessed. Neither have the training and skills needs of various groups of orphans (rural, urban, preschool, in-school, out of school, etc.) been analysed. Very little is known about the disruption of community dynamics resulting from HIV and AIDS: Does it occur? If so, in what ways? Is disruption offset by the emergence of new community-based organizations (CBOs) designed to respond to orphaned and vulnerable children, widows' needs, loss of labour? Who has benefited from pressures created by the epidemic, and what has this meant for national aggregate and community-level agricultural production? What mechanisms have communities employed to mitigate the impacts of AIDS? These and other questions are part of the rethinking taken up in this paper in response to the changing contexts of the AIDS epidemic.

[2] ART refers to not only the ARV drugs designed to lessen the burden of HIV in the body, but also to the accompanying laboratory, medical and other care that goes along with effective application of the drug regimen.

Structure of the paper

This introductory chapter is followed by three others. Chapter 2 reviews the findings of earlier studies on the impacts of HIV and AIDS on agriculture. A key lesson from these findings is that the impact of AIDS is generally borne at household level. Although it is tempting to generalize from small studies, broad generalizations about impacts are often countered by local realities (Binswanger, 2006). An understanding of how and why different rural communities and different gender and age groups are affected by and respond to HIV and AIDS is critical to appreciating the future dynamics between HIV and AIDS and rural societies.

Chapter 3 looks at the changing contexts of the epidemic, especially in terms of its epidemiology and the increasing availability of ART. It seeks to analyse the implications of the changing contexts on agriculture and food security.

Chapter 4 offers concluding remarks, reiterating the need to view the epidemic as a changing rather than a static phenomenon and to posit it within broader social, economic and ecological contexts. Ideas pertaining to prevention and mitigation interventions in rural agricultural societies are outlined.