

## **2. Impacts of HIV and AIDS on agriculture and food security in rural societies: a brief review of the literature**

### **Introduction**

---

A vast amount of literature (of varying quality) has been produced on the impact of the AIDS epidemic on agriculture and food security. A quick search on the Internet reveals about 174 000 mentions of relevant documents. Even assuming that several of these will be multiple mentions of a smaller number of documents, there are still probably a couple of thousand original documents on this subject available on the Internet. The chapter does not seek to review all of these documents. Instead, it reviews and discusses the findings of some of the research studies that are familiar to the authors of this paper. A complex picture emerges. While many of the studies are revelatory, there are still many aspects of the impact about which little is known.

### **Demographic and household impacts**

Household-level impacts of the AIDS epidemic have received extensive attention from researchers for nearly two decades, beginning with a seminal paper commissioned by FAO (Gillespie, 1989) on the potential impact of AIDS on the farming systems of Rwanda. A number of studies, mostly from

Africa, but also including parts of Southeast Asia, have documented the effects of HIV and AIDS on household demography as well as household labour availability and consequently agricultural production (Gillespie and Kadiyala, 2005 provide a thorough overview of impact studies; for Asia, see Du Guerny, 2002a and Gari, 2004). Several general conclusions about the impacts of HIV and AIDS have been broadly accepted. These include:

- loss of household labour, which affects income and crop production potentials;
- increased rural inequality and deepening levels of poverty arising from the disproportionately severe effects of HIV and AIDS on relatively poor households;
- reduction in household assets and wealth due to HIV and AIDS, leading to less capital-intensive cropping systems for severely affected households;
- deaths of rural women and men to HIV- and AIDS-related illnesses, which undermine the transfer of knowledge about crop and livestock husbandry and marketing to subsequent generations of farmers;
- undermining of nutritional status and health as diets worsen because of decreased food security and shifts to less nutritious but easier to cultivate crops such as cassava;
- reduction in land cultivated;
- gender inequalities, particularly regarding access to productive resources.

A central point of this summary (and of an increasing number of site-specific studies) is how existing societal-level impoverishment and socio-economic and gender differentiation shape HIV and AIDS impacts at the household level.

Table 3 provides a further summary of what is known or assumed about the interaction of HIV and AIDS and farming communities.

**TABLE 3 - IMPACTS OF HIV AND AIDS ON FARMING COMMUNITIES AND HOUSEHOLDS**

<b>Immediate impacts</b>	<b>Noted* agriculture-related responses by households</b>	<b>Assumed longer-term consequences for agriculture and related activities</b>
Loss of labour due to illness, death and caring	Decreases in area cultivated and changes in crop mix; less attention to care of livestock, soil and/or water	Potential decreases in overall food production (food availability, access and stability)
Cutbacks in food availability and consumption	Decreased energy for farm or market tasks	Increased child and adult malnutrition (food utilization and access)
Loss of income and increased medical and funeral expenses	Disinvestment of assets, including sale of livestock and equipment; renting of land; piece work on other farms	Increased socio-economic inequalities and new or deeper impoverishment for some
Increased dependency, with women and older adults assuming greater household responsibilities	Less time spent on farm production or marketing	Growing gender and age inequalities
Loss of knowledge and skills essential for agriculture	None known	Loss of efficiency, greater stress on natural resource base, increased food insecurity
Loss of access to land and equipment/livestock for widows and children	Female- and child-headed households' dependence on non-farm employment and/or begging	Deepening impoverishment for affected household members

\* Noted means cited in at least one study of a localized impact.

Sources: Adapted from Slater and Wiggins, 2005; FAO, 2006.

Due to very limited resources, many of the initial studies of the impact of HIV and AIDS relied on relatively small samples and were specific to a certain period. In other words, they were snapshots of what appeared to be happening at the time of the study. It should be remembered that their main objective was to verify whether or not an impact existed. Most of these studies did not look beyond households affected by HIV and AIDS, so comparisons with non-affected households were not made, limiting the context of impact studies. Many early impact studies did not refer to other socio-economic studies conducted in the area, thus excluding useful comparisons with factors other than HIV and AIDS that affect these societies (for a fuller discussion of the strengths and weaknesses of HIV and AIDS impact studies see Gillespie and Kadiyala, 2005).

## Changes in agriculture

Various studies noted changes in farming methods as rural societies seek to respond to the loss of labour due to AIDS and related illnesses. A study by FAO/UNDP-SEAHIV in 2002 analysed mechanisms over time, along with the energy budget constraints and trade-offs at the farm-household level. For example, many small-scale producers in northern Zambia are returning to a traditional form of slash-and-burn land preparation – an agricultural method that both the colonial and the post-independence governments sought to ban (FAO, 2004b: 36–37). Burning has an impact on forests and forest products, which are often essential sources of food and income for some households. Changes in crop mixes, including a decline in cash crop production, are assumed to be occurring as HIV- and AIDS-affected households turn to less labour-intensive crops. Other studies have noted that significant changes in the structure of rural societies are intensified by the presence of HIV and AIDS. An example is rural Malawi, where policy changes, limited income-earning opportunities, extreme food shortages and HIV have pushed many household members into daily or piecework for others. Some rural households are leasing their land to wealthier urban residents, thereby increasing both intra-rural and rural-urban inequalities. One study found that: “Male farmers have recently been seeking urban or other patrons to help finance their access to fertilizers and land rentals and sharecropping arrangements have ensued” (Bryceson, *et al.*, 2004: viii).

Although earlier studies pointed to a shift from labour-demanding crops to less labour-demanding ones, this pattern is neither general nor permanent. Attempts have been made to estimate the extent of rural labour loss due to AIDS mortality. Using existing epidemiological data, FAO had projected that by 2020 the nine most severely hit sub-Saharan African countries would lose from 13 to 26 percent of their agricultural labour force to HIV and AIDS (FAO, 2000a). It was postulated that this would open the region to a “new variant famine” in which the loss of young and middle-aged people would leave households more vulnerable to food shortages caused by drought, policy change or conflict (de Waal and Whiteside, 2003). Both of these arguments are open to qualification and revision, especially in light of the stabilization and decline of the epidemic and the increasing availability of ARVs in these countries.

## Rural differentiation

A feature of rural societies that is increasingly evident from a range of studies is the likelihood that HIV and other illnesses contribute to increasing social differentiation along gender and class lines. Unlike salaried workers who continue to be paid when they miss work or who are covered by insurance schemes, “agricultural households, which typically combine off-farm wage employment of some family members with on-farm engagement of the rest of the members, suffer double effects from the impacts of HIV and AIDS on family labour” – loss of wage income and loss of labour (Page, 2007: 5–6). Increased numbers of female-headed households, which tend to be among the poorest in rural societies, have been noted in many studies (FAO, 1994: para. 2.3.1). A study in eastern Zimbabwe found that about four out of five people who died were primary household income earners, and 60 percent “lost their jobs during their illness. In addition, one in seven caregivers had to give up employment to provide care for the sick family member, and about one in four households had to relocate soon after the adult death” (Zimbabwe National AIDS Council, 2004: 41). A study in Kenya found children orphaned by AIDS less likely to be in school than non-orphaned children, and absent from school more than non-orphans. Girls were nearly 20 percent more likely than boys to drop out of school following the death of a parent (Desmond, *et al.*, 2000).

## Insights from recent studies

---

By 2000, the impacts of HIV and AIDS on rural societies were receiving greater attention. Food shortages in Southern Africa early in the twenty-first century added to the impetus to improve understanding of the types of changes that were occurring in rural societies. A growing number of local studies suggest that the general conclusions made from earlier impact studies need to be modified and that geographical and gender- and age-specific findings need to be more fully appreciated in understanding the range of impacts of HIV and AIDS. Some researchers are beginning to argue that impact analyses should not be static but should take into account the time dimension, as both the epidemic and its impacts are not static but dynamic phenomena. Initial studies should not be regarded as wrong, however, as most provided important insights and helped alert policy-makers and programme planners to the multiple dimensions of the epidemic. Impact studies moved the understanding of the epidemic away from an exclusive focus on biomedical and behavioural dimensions to a broader socio-economic perspective.

14 | Stressing the need for greater specificity in describing the impacts of HIV and AIDS does not diminish the realities faced by individuals, household members and communities in the wake of the epidemic. The epidemic is an important part of a combination of ongoing factors that contribute to rural differentiation and undermine rural livelihoods. The need for greater specificity arises because no simple explanation of common, across-the-board changes for affected rural societies is emerging. Evidence from case studies and anecdotal stories should be taken seriously, but care is needed in framing broad conclusions from these findings, including geographically, such as by generalizing to a national or continental (sub-Saharan African) level.

As observed by Chapoto and Jayne (2005; 2008), in most cases the impacts of HIV and AIDS on households depend largely on the particular characteristics of the household: size, the gender of the main income earner (head of household), the size of landholdings, ability to hire or call in labour, and the number and type of livestock and equipment owned. Death of either a male or a female is another factor in household ability to manage in the context of HIV and AIDS. The diversity of rural societies is reflected in the diverse responses to HIV- and AIDS-related illnesses and death. All these factors have long been known and promoted as part of rural development studies, but the linkages with other socio-economic disciplines were not fully appreciated during the first decade of research and response to the AIDS epidemic.

Recent rural impact studies have found fewer differences between HIV and AIDS-affected and non-affected households than had been earlier thought. This is especially the case among lower-income households, which are diverse in their own right. A study in several parts of Mozambique found that households that experienced an adult death compensated by bringing in new members. For example, a surviving male would likely remarry; a surviving female would seek the help of another female, perhaps a relative. Households that lose a prime-age male or female are not more likely than non-affected households to send away adult members “to engage in off-farm work” (Mather *et al.*, 2004: 7). The authors conclude: “Although some literature and popular discussion suggests that affected households face severe agricultural labour constraints, this paper presents several basic demographic findings that suggest that such constraints are not likely as severe as predicted, at least for many affected households” (ibid.: 9–10). The findings of a Kenya land study led the authors to conclude: “...it does not necessarily follow that the worse the epidemic the worse the impact on land rights. ...the link between HIV/AIDS and tenure insecurity depends on the interaction between different factors...” (Aliber *et al.*, 2004: 153–154).

Other studies are reconfirming earlier impact studies and adding depth to the understanding of changes occurring in rural societies. For example, a study in Rwanda indicated the choices that households make when affected by HIV and AIDS. As the time women devoted to care giving increased, the production of beer bananas, which were a source of income for women, declined. At the same time, sweet potato (food crop) production increased, as it permitted a more flexible labour schedule than beer bananas (Donovan and Bailey, 2006: 117). A recent study from Zambia found that when an adult male household head died, households already in the lowest half of income level experienced a decline of nearly 20 percent in crop output (Chapoto, 2006: 205). In north and central Mozambique, analysis found that farm income fell by 50 percent following the death of an adult male household member and by 13 percent after the death of an adult female. By contrast, off-farm income fell by more than 90 percent following the death of an adult female household member and by nearly two-thirds following a male death (Donovan and Mather, 2007).

Food security is undermined (or further compromised) in AIDS-affected households. A recent study in two districts of Zimbabwe found that less than a quarter of acutely affected households had three meals per day, compared with more than half of households coping with the impacts of AIDS. Similarly, the former households had less diversity in their diets (Food Security Network of Zimbabwe, 2007: 26). A study in Kagera region in northwest Tanzania found: “significant and robust

evidence that the impact of a prime-age death results in a 7 percent drop in consumption in the first five years after the death. After five years the effect remains negative, but becomes smaller and more imprecise” (Beegle *et al.*, 2006: 21).

Knowledge of the choices that are available to specific groups of people – such as women, larger or smaller households – and the availability of food and income is important in improving understanding of the impacts of HIV and AIDS. Not surprisingly, differences exist among different countries and from one society to another within a country. As in other aspects of rural society, the effects of HIV and AIDS on land issues are varied. In the Kagera region of Tanzania, land sales by men without the consent of their wives were reported, but were not found to be a generalized practice. In Uganda, after the death of their husbands, widows faced claims to land from in-laws. In KwaZulu-Natal, South Africa, young people who inherited land were particularly vulnerable to land losses as they had not established a clear presence and security on the land (Aliber *et al.*, 2004: 6–8). In-depth studies in Kenya in 2003 produced varied findings. In Embu district, where HIV prevalence was high but the full impacts were not yet being felt, “no examples [were found] of AIDS-affected widows being pushed off their land and very few accounts of distress sales”, but there were instances of land sales or transfers to cover the costs of medical care (Ibid.: 59). As previously noted, in central Malawi, sharecropping is increasing as people lose control of their land in exchange for loans for crop production. This diversity of experiences is a critical lesson learned from recent socio-economic impact studies.

**“Coping is a way of escaping from the challenge of confronting how people’s capabilities are stunted, how their entitlements are blocked, and how their abilities to function as full human beings with choices and self-definitions are frustrated”**

(Barnett and Whiteside, 2002)

In the mid- and late 1990s, few hard data documenting the impacts of HIV and AIDS on households and communities were available. At the time, many politicians and international development agencies commented that rural societies were coping with the impacts of HIV and AIDS (King Mswati III, 2001; Barnett and Whiteside, 2002). As other studies became available, especially after 2000 from Southern Africa, NGO and international agency programmes argued that traditional coping mechanisms were not functioning under the duress of AIDS. Numerous impact studies have pointed to the

survival mechanisms and, in some cases, resilience that households call on when responding to long-term illness and death. However, too frequently, authorities have cited the coping mechanisms of rural societies to avoid facing up to and understanding the changes – including those induced by HIV and AIDS – occurring in those societies. This is part of the general neglect of rural areas, as many national policy-makers and donor agencies assumed that rural households and communities were able to adjust to the changes resulting from AIDS and other external pressures.

Rugalema (2000) has drawn attention to the trade-offs that some HIV- and AIDS-affected households must make to manage AIDS-related illnesses and death. For example, the level of care provided to a chronically ill family member determines the amount of time available for child care, field work or market sales. As medical expenses rise, children may be withdrawn from school for varying periods to help with care giving or household labour (Rau, 2002). In other cases, households cut expenses in several ways. A study in Zimbabwe noted that households with chronically ill (for 3 to 12 months) members were “more likely to report an avoidance of education costs..., a reduction of spending on health care in order to purchase food..., and a reduction of spending on agricultural and livestock inputs...” (Senefeld and Polsky, 2006: 133). Thus, although rural communities may show remarkable resilience and adaptation to mitigate the impacts of HIV and AIDS, there may still be costs.

At some point, as households seek to deal with HIV and AIDS, a threshold for recovery may be crossed. One study provided the example of livestock sales: “Sales of chickens, goats or cattle are classic coping strategies that households all over sub-Saharan Africa employ. Some level of livestock sales is normal and does not result in increased poverty. At a certain point, however, household livestock holdings reduce to the level where they are no longer sustainable. At this point, livestock sales as a coping strategy become erosive” (Southern Africa Partnership Programme, 2005: 8). A study in Namibia argued that livestock sales in response to AIDS-related expenses also have implications for crop production: “Widespread sale and slaughter of livestock to support the sick and to provide food for the mourners at funerals not only jeopardize the livestock subsector but also the crop production subsector due to reduced availability of draught power and manure” (FAO, 2000b). Four key factors influence the recovery of households after an AIDS-related illness and death: continued availability of household labour (including the ability to solicit labour from outside); level of support from extended family members; availability and types of support from external sources (e.g. governments, NGOs); and access to alternative income sources.

Most impact studies examine the losses incurred (or not) by AIDS-affected households. Loss of property, livestock and equipment are frequently noted, but studies have not assessed who benefits as a result of the impact of HIV and AIDS on rural societies. Are there groups that gain from the losses incurred by others? Too little work has been done to answer this question with any certainty. A study from Malawi found: "HIV and AIDS...has unexpected opportunities for *increased* access to land for some. This is so in cases of custodianship over land that is due to an under-aged orphan(s). Older relatives in such positions, such as siblings of the deceased parents, find themselves with access to additional land, possibly for many years before having to relinquish such land" (Mbaya, 2002: 11). As previously noted, wealthier people in Malawi extend loans to desperate farmers in exchange for sizeable portions of crops produced. The view emerging from these studies is of increasing inequality, but to what extent is this due to AIDS? What are the internal dynamics of the increasing inequality? There is need for good data to answer these questions and help mould appropriate interventions.

Another finding emerging from recent impact studies is that AIDS is one of several factors affecting rural households. Most of these studies note that HIV- and AIDS-affected households and communities are, in many cases, already negatively affected by rural poverty. AIDS alone does not explain the situations faced by households, especially given the diversity of prevailing conditions among households before and as the implications of HIV and AIDS illnesses and death are experienced. Where households are already impoverished, AIDS exacerbates these conditions. In other words, the epidemic has a knock-on effect on ongoing processes. Poor rural living conditions, poor infrastructure, weak institutions serving rural areas, and AIDS all make it more difficult for many households to break out of the cycle of poverty and other crises that are common in rural communities (Iliffe, 2006).

### **Community-level impacts**

Although many papers refer to the impacts of HIV and AIDS on families and communities, little work has been done to assess fully the community-level changes arising from the AIDS epidemic (Drimie and Gandure, 2005: 8). Often, "community" is neither defined nor described, and it is assumed that a community is roughly equivalent to a specific place, such as a village or neighbourhood. A more comprehensive use of the term can incorporate these meanings, while also including communities

as economic and social units. Thus, union members in a business can be a community, as can a religious congregation or a women's savings club.

Jayne *et al.* (2006b) argue that differential impacts of AIDS occur as a result of prevailing conditions within communities. For example: "The negative impact of mortality on land cultivation is mitigated in relatively wealthy communities..." and "current adult mortality rates have little independent impact on changes in crop output or output per hectare" when assessed at the community level. In addition: "There is little independent impact of mortality or chronic illness rates on community income levels" (Jayne *et al.*, 2006b: 6 and 7). The main point is that factors beyond HIV and AIDS are important for determining the severity of the impact. The study also draws attention to the need for adequate understanding of the changes affecting rural societies and for contextualizing AIDS and its impacts. As summarized by Jayne and colleagues:

*...we find that communities with relatively high mean education levels are more adversely affected by adult mortality. This may be because educated adults tend to be relatively productive, and as they become sick and die, households and their wider kin networks lose the income and fruits of their labour. We also find the relatively wealthy communities, as measured by mean value of productive assets, are better able to maintain their cereal production than poorer communities suffering similar mortality rates. Communities with bigger farms suffer greater declines in output per hectare than more populated areas with smaller farm sizes, suggesting that labour constraints may be less severe in the latter areas. Lastly, mortality rates in the preceding three to eight years have a persistent negative impact on crop output per hectare, indicating a need to take into account communities' prior as well as current mortality rates in AIDS mitigation strategies (ibid: 8).*

The epidemic is having a recognizable impact on rural service delivery, especially on the personnel responsible for providing services to rural communities. Agricultural research and extension services, health centres and local markets have all suffered to some extent as staff become too ill to work, are absent from work for care giving, or die and are not replaced (Rau, 2004). Here too, however, the epidemic is not totally responsible for the adverse effects on rural infrastructure, but is an exacerbating factor. Three decades of structural adjustment followed by neglect of rural services and infrastructure are the base on which AIDS has stressed rural structures further. In an analytical overview, the following factors that make communities more vulnerable to the impacts of AIDS were noted (FAO, 2004a: 11):

- weak social cohesion and an absence of social networks and labour exchange among households to provide support to each other in time of crisis;
- limited opportunities to substitute labour-intensive livelihood activities with those requiring fewer labour inputs;
- limited opportunities to diversify livelihood activities into non-farm employment;
- regular experiences of food insecurity;
- insecure land tenure and a weak system of property rights;
- widespread poverty;
- limited access to external support such as information, home-based care, food for work, school feeding programmes;
- weak infrastructure, which makes many aspects of rural living very labour-intensive, requiring household members to travel considerable distances – often on foot – to collect water, seek health treatment, etc.;
- advanced state of the epidemic, which has exhausted any tradition of welfare assistance within the community.

Although hard evidence to support these factors is not offered, it is important to note that pre-existing structural factors feature prominently in the list.



challenges  
AIDS