This is the published version:


Available from Deakin Research Online:

http://hdl.handle.net/10536/DRO/DU:30006928

Reproduced with the kind permissions of the copyright owner.

Copyright : 2007, Nova Science Publishers
Chapter 11

UNDERSTANDING THE HIV AND AIDS-FOOD INSECURITY VIOLENT CYCLE: IMPLICATION FOR POLICY AND PROGRAM PLANNING

Danielle Pedi and Andre M. N. Renzaho

ABSTRACT

Recent years have seen a groundswell of support for research and program responses that address the negative two-way relationship between HIV/AIDS and food security. While the evidence base for the HIV/AIDS-food insecurity nexus is growing, program responses remain poorly documented and consensus on ‘best practice’ has yet to emerge. The first step towards more effective programming in response to the HIV/AIDS-food security vicious cycle is a clearer understanding and measurement of the linkages, documentation of what works and why, and dissemination of lessons learnt. This chapter draws significantly from evaluations carried out by Renzaho and others in the areas of HIV/AIDS, livelihoods and agriculture, food security and nutrition and public health. Applying the conceptual framework and tools developed and pioneered at the International Food Policy Research Centre’s Regional Network on AIDS, Livelihoods and Food Security (RENEWAL),¹ the chapter attempts to document the initiatives underway and chart a course forward. Breaking the vicious cycle of HIV/AIDS, poverty and food insecurity will require creative application of what we already know as well as considerable innovation. Evidence thus far points to the fact that effective responses will be multisectoral, integrated and community-driven.

¹ RENEWAL is a regional network in sub-Saharan Africa comprising national networks of food and nutrition-relevant organizations together with partners in AIDS and public health. More information is available at www.ifpri.org/renewal.
THE CURRENT CRISIS

The negative two-way relationship between HIV/AIDS and food and nutritional insecurity is a key aspect of a 'vicious cycle' in which HIV/AIDS interacts with pre-existing vulnerabilities in new and deadly ways. When viewed in the context of livelihood systems, both the causes and consequences of HIV/AIDS epidemics can be understood as shaped by local determinants, including existing patterns of food insecurity and poverty. HIV/AIDS has severe impacts on agriculture, rural livelihoods, and household nutrition status; it is undermining every aspect of food security—availability, stability, access to and utilization of food—particularly in those areas with high prevalence rates. At the same time, food and nutritional insecurity are increasingly understood to hasten the gradual deterioration from HIV infection to AIDS and eventually death, and to exacerbate the risk environment that increases susceptibility to HIV infection.

Since it was first identified in 1981, AIDS has killed more than 25 million people, making it one of the most deadly epidemics in recorded history. AIDS claimed approximately 2.9 million lives in 2006, while 4.3 million people were newly infected with HIV in the same year. Globally, there were 39.5 million people living with HIV in 2006; of these 17.7 million were women and 2.3 million were children (UNAIDS/WHO 2006). The geographic distribution of infection and death is highly uneven, with Sub-Saharan Africa accounting for 72% of all AIDS deaths and the largest proportion of new infections (UNAIDS/WHO 2006). The impacts of the sickness and death of swathes of the adult population in many of the poorest countries is wreaking havoc on attempts to achieve development gains worldwide. While there is the danger of 'AIDS exceptionalism', that is, focusing unduly on the impacts of HIV/AIDS in sectoral programs like food security, it is clear that HIV and AIDS poses a unique threat to human development.

In terms of its impact on livelihoods, HIV/AIDS is not dissimilar to other diseases and shocks: it makes people sick and kills them, and this consequently affects households and communities (Harvey 2004). For many poor households, HIV/AIDS symbolizes one more shock that threatens their livelihood and food security. Nonetheless, HIV/AIDS has several defining features that differentiate it from other epidemics or shocks: it is chronic, prolonged and fatal; it disproportionately affects prime age adults, killing the most productive- and reproductive-members of society; it creates growing numbers of orphans and increases the burden of the elderly; it effects those in rural and urban areas, the rich and the poor, but in highly differential and context-dependent ways; it effects both men and women but is not gender neutral; and it is socially invisible, tied to complex cultural attitudes towards sex and often associated with stigma, denial and discrimination (Harvey 2004, Tango International 2003, Haddad and Gillespie 2001).

HIV/AIDS has been characterized as a ‘long wave’ crisis, made up of several short waves (Barnett and Whiteside 2006). The first wave is that of HIV infection, followed by a wave of opportunistic infections. After a three- to eight-year lag, the third wave of AIDS illness and death strikes. Fourth and finally is the wave of impacts on households, communities and nations. The ‘long wave’ nature of HIV/AIDS means that HIV prevalence rates reveal only part of the story. While several countries—notably Uganda, Brazil, Thailand and Senegal—seem to be over the peak of the first wave, no country has reached the crest of the AIDS mortality wave and the impact wave is only just beginning (Loevinsohn and Gillespie 2003,
Gillespie and Kadiyala 2005). These impacts will reverberate through households, communities and societies for decades to come, and will require massive responses. The implications of the ‘long wave’ nature of HIV/AIDS epidemics include chronic and prolonged food and livelihood insecurity. However, HIV/AIDS may also act to make other stresses and shocks- such as acute food crises- both more likely and more severe (Drimie et al. 2006). A study on HIV/AIDS and food security during the recent Southern African food emergency concluded that HIV/AIDS ‘significantly increased the vulnerability of households to acute food insecurity in 2002-03’ (SADC FANR VAC 2003: IV), although these impacts were highly complex and context-dependent.

The concept of ‘new variant famine’ is one hypothesis put forward to explain the deadly interactions of HIV/AIDS with other shocks, thus serving to precipitate famine or humanitarian crisis. The hypothesis, articulated by de Waal and Whiteside (2003), stated that HIV/AIDS epidemics accounted for food shortages in southern Africa by contributing four new factors- household labour shortages due to adult morbidity and mortality, loss of skills and assets, increased burden of care for sick adults and children orphaned by AIDS, and interaction between malnutrition and HIV- that made the trajectory from ‘coping’ to destitution much faster for households and communities. The new variant famine hypothesis contends that HIV/AIDS has created a new category of vulnerable households in Southern Africa, significantly reducing the viability of farming livelihoods and increased the sensitivity of whole communities to shocks such as drought and macro-economic crises. This raises the prospect that ‘food emergency will become a structural feature of the Southern African landscape’ unless significant interventions are made (de Waal and Whiteside 2003:1236). While not without its critics, the possibility of a new variant famine occurring in the future cannot be entirely ruled out.

THE RESPONSE

Development interventions aimed at confronting HIV epidemics have evolved over time, with NGOs learning to respond to HIV/AIDS based on growing knowledge about local epidemics and lessons learnt over time (see O'Shaughnessy 2002). Documenting the changes in program responses to HIV/AIDS, Clarke (2002) identifies three ‘generations’ of programming: the first focused on simple information dissemination, the second targeted high-risk groups for prevention campaigns and counselling for those with the disease, and the third focused on creating an enabling environment which would bring about changes in behaviour. It is now widely understood that access to information and communication about HIV/AIDS is necessary but not sufficient to change people’s behaviours. Moreover, although responses to HIV/AIDS are conventionally broken down into components of prevention, care, treatment and impact mitigation, it is becoming clear that these components- particularly prevention and impact mitigation- are mutually reinforcing. Effective mitigation efforts, for example, the creation of sustainable livelihood options that reduce the incentive to migrate or engage in commercial sex work, can be the most effective methods of prevention (de Waal and Tumushabwe 2003). Thus, a ‘fourth generation’ of HIV/AIDS responses is needed which moves beyond individual behavioural interventions towards responses predicated on the need to address wider contextual factors driving the epidemic and conditioning its impacts. Such
interventions must confront the social and economic factors increasing susceptibility to infection as well as the vulnerability of certain groups and populations to the impacts of HIV/AIDS (Barnett and Whiteside 2006). The growing understanding of the complex interlinkages between HIV/AIDS and food security highlight the need for such a holistic and integrated approach.

Researchers within the IFPRI's RENEWAL network (see Gillespie and Kadiyala 2005:5 or Gillespie 2006:4) have adapted a useful framework for mapping both the determinants and the impacts of HIV/AIDS at several social and spatial levels- from the individual (micro), to the household and community (meso) to the broader society (macro) - which highlights the critical role of contextual factors in shaping the causes and consequences of disease transmission. Within this framework, susceptibility refers to the likelihood of an individual becoming infected by HIV, which has two components: 1) the chance of being exposed to the virus, which relates to a) the risk environment and situations that person must confront and b) the riskiness of his or her behaviours; and 2) the chance of being infected to the virus once exposed. By contrast, resistance refers to an individual's ability to avoid infection. Vulnerability refers to the likelihood that significant impacts will be felt at a certain level. Impacts are not single events, but processes, often slow-moving and invisible. The converse of vulnerability is resilience, which relates to the ability to avoid and/or recover quickly from the worst impacts of HIV/AIDS. The concepts of susceptibility/resistance and vulnerability/resilience draw out the systematic relationship between the causes and consequences of HIV/AIDS transmission, and thus the potential for a vicious cycle to occur. By understanding these concepts within the context of people's livelihoods, we can unpack the complex relationship between food insecurity and HIV/AIDS at the household and community level.

Much of the literature on HIV/AIDS and food security has focused on the household level, with the sustainable livelihoods framework being the most commonly used model for exploring the dynamics of the relationship (Harvey 2004). Drimie et al. (2006:13) notes, 'Household livelihoods can be considered insecure when they lack secure ownership of, or access to, resources and income earning activities, including reserves and assets, to off-set risks, ease shocks, and meet contingencies.' Narrowly defined, livelihood strategies are undertaken primarily to facilitate food security. The livelihoods approach, alongside the RENEWAL framework, can be used to analyse the multiple dimensions of HIV/AIDS and food insecurity, and thus enable us to begin to chart a course towards a fourth generation response to this 'vicious cycle'.

---

2 The sustainable livelihoods framework (Carney 1998, DfD 1999) depicts livelihoods as being determined in the first instance by the range of assets- human, social, natural, physical and financial 'capital'- available to the household, and secondly by the external factors- institution structures, social relationships, and vulnerability to critical trends, shocks and seasonal shifts- that affect access to and availability of these assets. Taken together, all of these factors influence the livelihood strategies people pursue, and ultimately their livelihood outcomes (including income and food security).
Understanding the HIV and AIDS-Food Insecurity Vicious Cycle

Susceptibility: The Impact of Food and Nutrition Insecurity on the Spread of HIV

Food insecurity and malnutrition may play a role in spreading HIV not only by increasing people's exposure to the virus, but also by increasing the likelihood of transmission due to a weakening of the immune system (Gillespie and Kadiyala 2005). At the microbiological level, the vicious cycle of malnutrition and disease is well-known: malnutrition weakens the immune system and contributes to poor health, which in turn aggravates malnutrition (Stillwagon 2005; Piwoz 2004; Chandra 1997; Scrimshaw and Sangiovanni 1997; Morris and Potter 1997). Susceptibility to HIV infection is determined by the strength of the immune system, itself heavily affected by nutrition, stress, and the presence of other infections and parasites. Both protein-energy malnutrition and deficiencies in micronutrients such as iron, zinc and vitamins are well-known to compromise resistance to infection (Chandra 1997, Semba 1998, Scrimshaw and SanGiovanni 1997). Micronutrient malnutrition, particularly Vitamin A deficiency, is also associated with increased risk of genital ulcers and STDs (Semba 1998), which in turn have been found to increase the risk of HIV transmission (Gillespie and Kadiyala 2005). A malnourished person is more susceptible to chronic parasitosis (parasite infestation) leading to chronic immune system activation. This can exhaust the immune system, making it less capable of fend off HIV or hastening the progression from HIV to AIDS (Loevinsohn and Gillespie 2003). In the context of poor
nutrition and sanitation, HIV/AIDS has also been found to act in deadly synergy with other infectious and parasitic diseases, including malaria and genital schistosomiasis (Stillwagon 2005).

Risk of ‘vertical’ or mother-to-child transmission (MTCT), which can occur during pregnancy, at childbirth or through breastfeeding, is also exacerbated by inadequate nutritional status. Evidence suggests that improving the health and nutritional status of the mother can prevent MTCT by improving the immune systems of the mother or fetus, slowing disease progression in the mother, reducing viral load, and lowering the risk of low birth weight (see Gillespie and Kadiyala 2005). Feeding practices are also crucial in the context of HIV/AIDS. The rate of transmission of HIV+ mothers through breastfeeding is about 8.9 HIV transmissions per 100 child-years of breastfeeding (Piwoz 2004). If breastfeeding is unavoidable, exclusive breastfeeding and early cessation is recommended, as mixed (breastfeeding and replacement feeding) without safe and nutritious substitute foods increases the risk of transmission. However, women are often unaware of the risks posed by mixed feeding. An evaluation of a WVA-funded project focusing on safe motherhood in Ethiopia (Natoli 2005) found that while the project had successfully integrated HIV prevention into safe motherhood programming (including the establishment of a Voluntary Counselling and Testing (VCT) service, subsidized condoms, and widespread IEC), mixed feeding was common practice amongst the women in the area. The evaluators stressed the urgent need to educate mothers on safe feeding practices as a critical component of any prevention program.

At the level of the microenvironment, food insecurity can force people to adapt their livelihood strategies in ways that place them at greater risk of exposure to infection (Loevinsohn and Gillespie 2003). The ability to act on knowledge about HIV/AIDS and how to prevent infection is often constrained by factors outside of a person’s immediate control. Risk cannot be clearly attributed to individuals or groups, and risk-taking behaviour cannot be thought of simply in terms of rationality: in a risk environment, people may make decisions that are rational in their circumstances, or may be compelled to take short-term risks if there is little hope for the future (Barnett and Whiteside 2006). A number of factors shape risk environments and increase the likelihood of exposure to HIV, including gender relationships, poverty and equality, and mobility.

With respect to gender, it is widely acknowledged that women are more susceptible biologically to infection, more likely to engage in behaviours that place them at risk of HIV infection and more vulnerable to the impacts of HIV/AIDS (Gupta 2000, Whelan 1999). In the face of extreme food supply problems, women may be compelled to provide sex in exchange for food for their families. A recent study of smallholder villages in Malawi found that the exchange of sex for food was becoming increasingly incorporated into casual labour exchange contracts, and that women travelling in search of food (‘kusokola’) were frequently targeted for ‘transactional’ sex (Bryceson et al. 2004, Bryceson and Fonseca 2005). Unlike sex workers, women engaging in transactional sex are difficult to target for safe sex and behaviour change interventions due to the chance and unplanned nature of their desperate acts. These women are less equipped to bargain the terms of a sexual encounter and less well-versed in the survival strategies associated with sex work (Bryceson and Fonseca 2005).

Like gender, the role of poverty as a risk factor for HIV infection is highly context-dependent. Clearly, HIV/AIDS is not simply a disease of poverty; nonetheless, it does seem to introduce a new dimension of vulnerability to poverty (Topouzis and du Guerny 1999), and there can be no doubt that HIV/AIDS impacts on impoverished households are much more
severe. A recent evaluation of an HIV/AIDS project in Tanzania (Renzaho 2006) brings the role of poverty into sharp relief. In a survey of 54 commercial sex workers (CSW), 100% cited lack of affordability as one of the reasons they did not use a condom the last time they had sex with a client. These women noted that sex without a condom fetched the highest rates (between US$ 3 and 10 dollars). Given the high demand for unprotected sex (66.7% of CSW claimed clients were willing to pay extra for sex without a condom), and the impoverishment and exploitation of CSWs, they are simply prevented by poverty from negotiating safer sex. Indeed, among the CSWs interviewed, poverty and hardship experienced after divorce were cited as major drivers for entering the commercial sex industry in the first instance. This same study found that young people did not act on prevention messages due to poverty and unemployment. In interviews, youth indicated they were often bribed with money (usually around US$ 10) or part time employment in exchange for unprotected sex. In such vulnerable situations, these young people claimed they tried to negotiate safe sex, but ‘ultimately money dictates everything’ (Renzaho 2006:31).

Agricultural activities themselves can produce situations of risk by creating poles where people congregate and where sexual contact is concentrated. Marketing arrangements for rural commodities can require women and men to spend long periods away from their families, while conditions at rural markets and trading centres- market closing and opening times, the mingling of people from different rural and urban areas- also create conditions of risk (Ngwira et al. 2001). Commercial plantations and estates, as well as agricultural industries, employ large proportions of low paid migrant workers often housed in over-crowded single-sex dormitories lacking privacy or recreational facilities. These conditions are conducive to situations of risk such as casual and commercial sex (FAO 2003, Rugalema 1999, Loevinsohn and Gillespie 2003).

At the level of the mesoenvironment, the critical link between HIV/AIDS and food security is predicated on the strength of rural livelihoods systems. Agriculture is the main source of livelihood among those people most affected by HIV/AIDS epidemics around the world (Gillespie and Kadiyala 2005). More broadly, societies depend in large part on their agricultural sectors to sustain the production of adequate food for life. The impact of HIV/AIDS on farming systems has been characterized as ‘insidious’, involving gradual and small but significant (and usually negative) changes with each turn of the cultivating season (Barnett and Whiteside 2006). Pervasive poverty and the inability of local agricultural systems to provide adequate livelihood opportunities often compel people to seek work in large commercial farming areas, rural industries or urban areas on a long-term or seasonal basis (FAO 2003). Rural ‘push factors’ motivating such decisions - the size of land holdings, patterns of land inheritance, the extent of environmental degradation, and a lack of employment opportunities - underpin situations of increased risk of exposure to HIV (Loevinsohn and Gillespie 2003, Ngwira et al. 2001). These structural forces serve to make rural households increasingly dependent on off-farm income sources, and in particular cash and remittances from migrant labour (FAO 2003).

Macro environmental factors determining the health and productivity of livelihood systems, and thus susceptibility to HIV/AIDS, include climate, geography, physical infrastructure, policy, conflict, social practices and culture (Loevinsohn and Gillespie 2003). Of particular importance are decisions and policies that contribute to food insecurity, for example poorly managed market liberalization policies that serve to increase insecurity among small producers or ill-conceived land redistribution policies, as in Zimbabwe (Ngwira
et al. 2001). Research also suggests that conflict-related displacement heightens susceptibility to HIV/AIDS by exacerbating poverty, dependency and powerlessness, which in turn increases the likelihood of sexual coercion, transactional sex, and unprotected consensual sex (Harvey 2004, TANGO International 2003).

**Vulnerability: The Impact of HIV/AIDS on Food and Nutritional Insecurity**

**Household Level**

*Increased Nutritional Requirements*

People with HIV have increased nutritional needs, although the nutritional requirements vary with the stages of disease progression and nutrition status itself. Generally, the WHO (2003) recommends an increase in energy of 10% in asymptomatic adults and children, up to 30% for symptomatic adults and from 50 to 100% for symptomatic children. While it is widely accepted that malnourished HIV+ patient has a relatively worse prognosis (Semba and Tang 1999), research is inconclusive as to the role of specific micro-nutrients, particularly Vitamin A. The difficulty in determining micro-nutrient requirements is further compounded by the fact that micronutrient deficiencies are common in resource-poor settings where HIV is prevalent (WHO 2003). Nutrition is also critical among those receiving treatment for HIV/AIDS. Although Antiretroviral Therapy (ART) is known to improve nutritional status, the side effects of ART, including nausea and vomiting, affect adherence to the treatment (Piwoz 2004). In Mozambique, an impact evaluation of the food aid program in Tete province (Renzaho 2005b) noted that lack of food among those undergoing ARV treatment contributed to intolerable side effects associated with taking medication on an empty stomach, which in turn led to high non-compliance rates and thus diminished the effectiveness of the medication. Food aid targeted at those undergoing ARV was found to improve compliance and minimizing the side effects of the treatment. Combined with access to treatment, food aid was found to shorten recovery time to opportunistic infections and strengthen the physical capabilities of those in advanced stages of the disease. Unfortunately, too often clinical ART treatments are not linked with appropriate nutrition counselling or feeding programs.

Similarly, quantitative data on acute and chronic malnutrition gleaned from an evaluation of an HIV/AIDS orphan mitigation project in Ethiopia (Murray 2004) indicate that almost half of these children aged between one and five were chronically malnourished. In focus group discussions, orphans indicated they had experienced a shortage of food and that the quality of food had reduced since orphanhood. Discussions indicated that ‘the death of a mother rather than father seems to affect the psychosocial support of OVCs more keenly’ as the mother was seen as ‘responsible for love, care, support and food of the child’ while the father’s role was to provide money and labour (Murray 2004:24). These data point to the particular vulnerabilities of orphans in terms of both physical and emotional well-being. At the level of the household or ‘microenvironment’, the literature on the impacts of adult illness and death suggests that ‘individuals and households move through a process of experimentation and adaptation as they attempt to cope with immediate and long-term demographic change’ (SADC FANR VAC 2003:22). It should be noted that in the context of
HIV/AIDS, the term ‘coping’ may be misleading, as it suggests short-term, reversible management strategies that are not too costly. Individuals and households affected by HIV/AIDS can perhaps more rightly be described of as ‘struggling’ (de Waal and Tumushabwe 2003).

The impacts of HIV/AIDS and household responses are highly context-dependent and difficult to untangle from the effects of other environmental, political and economic factors. Nonetheless, it is possible to discern some commonly reported impacts and responses in relation to each set of livelihood assets—human, social, financial, natural and physical capital—at the household level.

**Impacts on Human Capital**

HIV/AIDS impacts most obviously on human capital, as the cumulative and long-term effects of ill health, caring for the chronically ill, premature death and caring for orphans depletes a household’s store of labour, time and knowledge. The FAO estimates as much as two-person-years of labour are lost as a result of HIV/AIDS and numerous studies confirm drops in household agricultural production as a result of HIV-related adult mortality (FAO 2005). In an evaluation of a food security project in Lesotho, Renzaho (2005a:15) found that communities felt HIV/AIDS was one of the factors negatively affecting quality of life and regional food shortages:

‘Community members indicated that most people are affected by the disease but they do not know their status. This means a decreased capability of a larger portion of the community to undertake physical work such as cultivating fields (leading to reduced productivity), increased nutritional needs and susceptibility to other diseases and thus increased demand for medical care’.

HIV/AIDS-affected households experience longer periods of food insufficiency than non-affected households (FAO 2005, TANGO International 2003). In poorer households affected by HIV/AIDS, illness and death have been found to increase malnutrition. For example, an FAO (2003) study in Tanzania revealed that per capita food consumption in the poorest households decreased by 15 percent after an adult death. Apart from labour, HIV/AIDS has adverse effects on the ability of the household’s younger generations to acquire and use knowledge they need to undertake agricultural or other economic activities. Children left behind may not witness farming practices or engage in the informal exchanges of knowledge and tools associated with these livelihood practices (Haddad and Gillespie 2001), resulting in the loss of (often gendered) indigenous knowledge relating to plant and animal biodiversity, cropping cycle and the availability and use of traditional medicines (FAO 2005).

The growing number of AIDS orphans itself has wide-ranging affects on human capital. A variety of livelihood outcomes can occur in households taking in orphans, depending on the status of both the orphan and the host family. Wealthier households and older orphans may signal less burden and even benefits in terms of household labour supply (O’Donnell 2004); however, this may come at the expense of the child’s well-being. In the orphan mitigation project in Ethiopia mentioned above, the evaluation found that orphans were more vulnerable to being forced into child labour, more likely to forgo schooling and generally required to work more than their non-orphan counterparts. Several respondents stated that orphans were ‘forced to work as daily labourers to earn their food’ within the household (Murray 2004:25).
Few orphans felt they received community support, with only 9% of orphans describing assistance from friends and 6% receiving assistance from social groups or the government. Similarly, the evaluation of the food aid programs in Lesotho (Renzaho 2005c, see chapter 10) cautions against the assumption that increased willingness to take in abandoned or orphaned children in order to receive food aid is necessarily a healthy and positive response. The evaluation noted concerns raised that guardians were being opportunistic, abusing the situation by mistreating the children in their care and denying them an adequate portion of the food aid. In focus group discussions, many orphans indicated a lack of understanding of their entitlements to take-home food rations distributed through school and an inability to participate in decision-making regarding utilization and distribution once the food reached the household. Health workers reported the expression ‘Nthoangoan’- ‘the father wants the food of the child’- in use since the 1980 to describe this situation.

**Impacts on Social Capital**

Households affected by HIV/AIDS become increasingly reliant upon their extended families and informal social networks for assistance with agricultural production, childcare and household chores. Despite their best intentions, affected households are simply unable to cultivate and maintain reciprocal relationships due to time and resource constraints (Harvey 2004, Bryceson et al. 2004). Dwindling contribution to and participation in informal social networks means less access to these safety nets and increased vulnerability (du Guerny 2002, FAO 2003). This increase in social isolation is underpinned by the silence, stigma and denial so often associated with HIV/AIDS. In the most severe cases of household loss of social capital, there is anecdotal evidence that households may dissolve or disappear due to HIV/AIDS-related death or loss of labour (c.f. Rugalema 1999).

**Impacts on Financial Capital**

HIV/AIDS creates new expenses for treatments and medications, related transport costs, and customary funeral and burial expenditures. These can become major items for household budgets, requiring households to sell off assets, borrow funds, or spend savings. The difficult trade-offs facing poor households were captured by one community member during an evaluation of a food security project in Lesotho (Renzaho 2005a:15):

> 'In the presence of insufficient funds to meet all the pressing needs, the question is whether to mobilize available resources to meet nutritional and medical needs of the sick person or the nutritional and school needs of children in the households. Once there is one sick person in the household and you are hungry, the inevitable is to neglect and abandon those who depend on you, such as a sick mother neglecting and abandoning her own children'.

While household spending on food items may tend to drop less significantly than non-food items, higher quality foods may be replaced by poorer quality foods (Bonnard 2002), and households may be less able to afford fuel for food storage and preparation (Hunter and Twine 2005). Households that are unable to afford purchased seeds and fertilizers may switch production from cash crops to food crops, with resultant decreases in output and income (Ngwira et al. 2001, Bonnard 2002). Increased indebtedness associated with medical and
funeral expenses is also common, particularly in cultures where the family is expected to spend lavishly on funeral celebrations (Ngwira 2001).

**Impact on Natural and Physical Capital**

Stores of household natural and physical capital are also eroded by HIV/AIDS. In terms of land use, households may be unable to sustain cropping patterns without seeking labour replacement (thus running the risk of new infections associated with migrant labour). Since many poor families cannot afford replacement labour, they may respond by allowing land to go fallow, reducing and/or delaying the amount of weeding, leasing plots of land, or cultivating crops that require less labour. These livelihood strategies themselves can have adverse impacts. Non-use of land may leave a family vulnerable to loss of land rights (Haddad and Gillespie 2001); declines in weeding and farm upkeep are associated with an increase in pests (Barnett and Whiteside 2006); and common labour saving strategies, for example changing crop production from maize to cassava, can in fact imply considerable increases in labour and time for food processing (Bonnard 2002, White 2002). Replacement of labour-intensive crops with root crops–which grow more quickly, but are not as profitable or nutritious–result in a greater consumption of starch and lower farm income to buy more nutritious foods (Barnett and Rugalema 2002). The move away from crops that provide effective erosion control also endangers future soil fertility (Gillespie 2005). The natural environment acts as a buffer with regards to nutrition, as households increasingly turn to nature to provide for dietary needs (wild vegetables, bush meat, insects), as well as formerly purchased goods such as fuel and water (Hunter and Twine 2005, Bishop-Sambrook 2004). These response strategies may result in the over-exploitation of natural resources.

In terms of land ownership, women and orphans are particularly vulnerable to losing land title with the death of the husband or father. Even in wealthy households, AIDS-related death may signify the loss of assets by the surviving spouse (usually female) due to inheritance customs (Ngwira et al. 2001). In one region of Ethiopia, for example, while women were expected to provide home care and psychosocial support for people living with HIV/AIDS (PLWHA) and orphans, they were found to have inferior status in terms of household decision-making and secure access to property. Despite Ethiopian legislation providing for female inheritance, in practice property inheritance was found to be available only to males. Thus, if there were no sons in the family, a woman and her daughters were forced to leave the property upon the death of a husband (Murray 2004).

Increased financial burdens may prohibit households from maintaining or replacing household assets (e.g. roofing, household tools) or productive assets (e.g. grain storage, farm tools, irrigation systems) (Bonnard 2002). Loss of livestock, often sold to cover health costs or slaughtered for funerals, also represents a significant loss of productive assets.

**Community Level**

**Impacts on Human Capital**

Beyond the aggregate household level impacts, there are critical impacts felt by the community at large. At the level of the mesoenvironment, the scale of HIV/AIDS impacts will be determined by the store of community assets and the livelihood strategies mobilized at the community level. In terms of human capital, the demographic impact of generalized
epidemics on the population structure is striking, showing dramatic changes in the size, age, and sex composition in communities (Barnett and Whiteside 2006), as AIDS robs communities of economically productive adults and increases the number of orphaned children and child- and elderly-headed households (Jayne et al. 2004). The impact of HIV/AIDS on migration patterns is further skewing rural and urban demographics, although in site- and gender-specific ways. In areas of high prevalence, data suggests a net out migration of large numbers of young people (particularly males) from their rural homes, as they search for livelihood opportunities (FAO 2003). However, in the long term, AIDS-related labour shortages may increase migration from the urban informal sector to labour-short rural areas (Jayne et al. 2004). While impacts of an AIDS-related death on agricultural communities are highly variable, aggregate data indicate that HIV/AIDS-related mortality is devastating the labour force within the agricultural sector. The FAO (2003) estimates that approximately 7 million agricultural workers worldwide have died of AIDS since 1985, projecting 16 million more may die by 2020. In the worst affected African countries, up to 26 percent of agricultural labour forces may be lost in the next two decades (FAO 2003).

**Impacts on Social Capital**

In terms of social capital, Bonnard (2002:2) notes, 'Both formal and informal local institutions, such as traditional customs relating to land tenure, child adoption and local governance of natural resources, are weakened when so many productive members of a community become affected with HIV/AIDS and desperate households increasingly erode public resources.' Communities may simply reach a 'saturation point' where customary bonds of social support become weakened and dysfunctional. The death of an economically productive adult reverberates through a community, as people spend more time attending funerals and visiting the sick. In one village in rural Malawi, villagers reported attending approximately one funeral per week (Bryceson et al. 2004). In areas of high prevalence rates, other households may become unable or unwilling to take in new dependents, leading to a growth in child-headed households. Survivors - women, orphans and the elderly in particular - may find few relatives or community members on whom to depend, and may thus suffer from social exclusion and experience a break in kinship and extended family ties (Barnett and Rugalema 2002). Denial and stigma often pervade community attitudes towards HIV/AIDS. Indeed, stigma is itself an impact of HIV/AIDS that can prevent individuals and households from adequately responding. This is especially true among the poor, where heavily affected communities may come to resent the burden of care (Gillespie 2005).

HIV/AIDS is also fostering the formation of new social capital, as communities organize to mitigate against the effects of the disease and adapt existing customs and institutions to its impacts. The emergence of burial societies, labor-sharing schemes, and new customs relating to funeral, marriage and inheritance signal some of the ways societies are responding to HIV/AIDS (Harvey 2004). For example, in the evaluation of the food security project in Lesotho, farmers involved in the project formed a cooperative to provide for the burial needs of the community (Renzaho 2005a). These farmers recognized that surviving family members found it difficult to provide a coffin and a cow to be slaughtered as part of the funeral celebrations. Farmers contribute two Rand a month to the association, which is used to assist with burial services and expenses for those who cannot afford it. Such mobilisation of collective resources represents the formation of new community social capital in the face of HIV/AIDS.
Impacts on Financial Capital

In terms of financial capital, the magnitude and nature of HIV/AIDS on rural labour markets and wages are highly context dependent and difficult to ascertain. While loss of labour and assets will likely increase the demand for labour in the short term, over time aggregate reductions in household income coupled with cash constraints might depress labour and non-tradable demand in areas of high prevalence (Gillespie 2005). The multiplier effect of depressed demand could lead to a decline in real wages and aggregate community income, thus impacting on households not directly affected by HIV/AIDS. Jayne et al. (2004) project a progressive recapitalisation; that is, a gradual loss of savings and productive assets (i.e. livestock, tools, equipment) in highly affected rural communities. Over the long term, large numbers of households selling off productive assets and reducing cash inputs in agriculture may result in a reduction of the number of farmers who are able to produce a marketable surplus from farming. Capital assets lost by affected households are usually redistributed within the community, which may also serve to exacerbate socioeconomic inequalities and further marginalize relatively poorer households over time (Jayne et al. 2004). As households struggle with financial burdens associated with HIV/AIDS, the demand for loans and consumptive credit may increase, thus driving up the cost of credit. The cumulative impact of increasing numbers of financially insecure households has knock-on social effects, including increased fractionalization and tension caused when indebted households can not repay their loans or when creditor households attempt to seize assets (Bryceson et al. 2004).

Impacts on Natural and Physical Capital

Natural resource management practices that are dependent on collective action - for example integrated pest management, social forestry or watershed management - may be adversely affected in high prevalence contexts (Haddad and Gillespie 2001). People may not see the value in pooling collective risk to manage common property such as rangeland, cropland and river basins, resulting in environmental deterioration. There may be a shift from land conservation and soil protection activities such as mulching, terracing and fallowing to activities such as bush burning and the abandonment of weed and pest control (de Waal and Tumushabwe 2003). The effects of such changes are not confined to the household farm, but impact on the entire farming system. Furthermore, as more households turn to the natural environment to provide nourishment, fuel and other necessities they can no longer afford, increasing strain may be placed on land and water resources, leading to declines in conservation as well as decreases in agro-biodiversity (Bishop-Sambrook 2004). Finally, as noted above, the death of the male head of a household can result in the loss of land title, especially for the poor, orphans and women. Jayne et al. (2004) also assert that the long-term cumulative effects of loss of land rights may be a greater concentration of land holdings, with control shifting from poor to relatively wealthy households, and concomitant increases in land conflict.

In terms on physical capital, rural infrastructure may be affected by labour and skills shortages or by disruptions in work periods due to funerals. Similarly, declines in collective action to maintain physical community assets may result in the deterioration of infrastructure including terraces, irrigation and drainage channels, cleared areas, roads, bridges, fencing, storage facilities, and critical water and sanitation infrastructure (Barnett and Whiteside 2006).
Macro Level

At the macro level, in countries with generalized epidemics, evidence indicates HIV/AIDS reducing the overall level of economic growth, draining the public sector and potentially impacting on governance, although the scale of macroeconomic impacts is disputed (Loewenson and Whiteside 2001, Harvey 2004). HIV/AIDS undermines service-oriented sectors such as ministries of agriculture both directly through high absenteeism, high turnover, and loss of skill and institutional memory, and indirectly through increased financial costs of training new staff and growing demand for health care, funeral payouts and pensions (Loewenson and Whiteside 2001). Not only does HIV/AIDS affect the ability of institutions to meet their mandates, for example the provision of agricultural extension services, it also undermines their capacity to address the new demands of AIDS-affected communities. In the context of already fragile economic and governance structures, HIV epidemics are creating new demands for state services while at the same time undermining the capacity of states to deliver these services (Drimie et al. 2006).

In terms of private sector impacts, some evidence suggests that the impacts of HIV/AIDS on agricultural businesses are quite large. In a study of five Kenyan agro-estates, Rugalema (1999) found that AIDS-related morbidity and mortality were affecting overall productivity and profitability of agricultural companies, with company medical expenses due to HIV/AIDS increasing by US$1.15 million between 1989 and 1995. Total financial costs to companies were explained primarily by HIV and AIDS-related absenteeism (37% and 15% of total, respectively), employee health care costs (12%) burials (10%) and the cost of recruitment (10%). HIV/AIDS-related financial losses, coupled with the loss of skills, and the psychological impacts on the workforce are associated with rising production costs, reductions in investments and shareholder dividends and overall loss of competitive edge. This has knock-on effects, since less profits means less taxes for government services (Rugalema 1999).

There is a growing body of evidence depicting the dynamic interaction between HIV/AIDS and food and nutritional security; nonetheless, significant gaps in knowledge still remain. There are gaps around impacts on non-agricultural livelihoods (i.e. pastoralists, fisher folk, urban poor), and impacts on other income sources such as casual labour and petty trading, and non-farm (Harvey 2004). More research is needed around the role and importance of particular vitamins and nutrients over the biological course of the disease, as well as the full measure of macroeconomic and social consequences of HIV/AIDS. Nevertheless, a sufficient evidence base exists for the HIV/AIDS-food insecurity ‘vicious cycle’ to make mobilizing, measuring and documenting effective response strategies an urgent imperative.

**BREAKING THE VICIOUS CYCLE: PROGRAM RESPONSES**

Understanding the negative two-way relationship between HIV/AIDS and livelihoods security opens up opportunities for program and policy responses. The aim of addressing the HIV/AIDS-food insecurity nexus is twofold: firstly, to improve the likelihood that food and livelihood programming can achieve its objectives despite HIV/AIDS, and secondly as part of
a multisectoral response to the epidemic (Gillespie and Kadiyala 2005). Programs that achieve these dual objectives are still in nascent stages of development. It is frequently the case that food security programs merely add on an element of simple (and often poor quality) HIV awareness-raising (Greenaway and Mullins 2005), while responses aimed at impact mitigation are usually isolated and small-scale (Drimie et al. 2006). Program responses remain poorly documented and rarely evaluated, and consensus on ‘best practice’ is still emerging (Drimie et al. 2006, O’Donnell 2004).

Assessing Impacts, Designing Responses

It is notoriously difficult to untangle the impacts of HIV/AIDS from all the other ‘multiple overlapping vulnerabilities’ contributing to food and livelihood insecurity (Drimie et al. 2006:33). Simply targeting impact mitigation interventions towards people with HIV/AIDS is empirically problematic. Most people who are infected are not aware of their sero-status and can not be easily identified. Targeting households with people living with HIV/AIDS may exacerbate the stigma associated with the disease and further increase vulnerability. This approach is also conceptually flawed in that it makes little sense to indiscriminately privilege HIV/AIDS over other diseases and illnesses (Drimie and Mullins 2005). Blanket labelling of certain households as ‘vulnerable’ to food insecurity based on demographic characteristics, for example female- or elderly-headed households, runs the risk of both inclusion and exclusion error (O’Donnell 2004). Finally, in areas of high prevalence the separation of ‘affected’ from ‘unaffected’ can be superficial, as it may be the case that virtually all households have been affected in some way (White 2002).

Given these difficulties, proxy indicators (of adult morbidity and mortality, for example) are most often used to identify the degree of HIV/AIDS-related vulnerability. These commonly target ‘vulnerable’ households or households with ‘chronically ill’ members. But this too can lead to unexpected difficulties. In Swaziland, for example, a food security project for vulnerable households (Dube and Khumalo 2004) used ‘chronically ill’ as a proxy target indicator in order to reduce the risk that participation in the project would be seen as an admission of HIV positive status. In addition to PLWA, other chronically ill and vulnerable households were included in the target group, based on community selection. The project involved the creation of home garden improvement and nutrition training groups. Rather than being discriminated against, project beneficiaries stated they were involved in training other community members in improved home gardening, thus enhancing their leadership and standing within the community. However, an important concern emerged through the evaluation, namely that others in the household did not feel the need to continue in the project after the death of the chronically ill person. Thus, another issue for projects targeting PLWA and ‘chronically ill’ households is sustaining participation of indirect beneficiaries after the inevitable death of a chronically ill individual.

Ideally, impacts of HIV/AIDS on household livelihood and food security should be measured both within households, to assess the effects across time and between affected and unaffected households (O’Donnell 2004). Practically, the stigma, denial and silence attached to HIV confound efforts to develop effect monitoring and evaluation systems to track changes and measure program impact on the HIV/AIDS situation. The evaluation of the food aid project in Mozambique (Renzaho 2005b) noted that although sentinel data indicated
prevalence rates for HIV/AIDS were at 13.6% in the target province and mortality was excessively high, HIV/AIDS was reported as the cause of death in only 6.3% of cases. This underreporting of HIV/AIDS mortality could be attributed to stigma, discrimination and/or lack of access to HIV testing. Similarly, the evaluation of food aid programs in Lesotho (Renzaho 2005c) noted that despite estimated prevalence rates of 30% in Lesotho, HIV/AIDS was attributed to only 8% of mortality, with TB and diarrhoeal diseases representing much larger proportions. Again, the stigma associated with HIV/AIDS leads many people to provide secondary symptoms as the cause of death. Overcoming such barriers to effective measurement will require close consultation with communities, who are in the best position to identify indicators, delineate their use and design appropriate methods of data collection.

Indeed, one of the best places to look for ‘multisectoral’ and ‘crosscutting’ responses to the HIV/AIDS food security nexus is within communities themselves. Community-driven approaches draw on local knowledge and tend to focus more broadly on affected communities, rather than vertical sectoral programs that focus on infected individuals (Gillespie 2005). While survey-based studies on HIV/AIDS impacts often reveal ‘coping’ strategies that involve the mining of assets, communities and households are also responding in innovative ways through labour sharing, community child care, credit schemes for funeral expenses, community food banks and the like ((Loevinsohn and Gillespie 2003, Gillespie 2005). Part of any program response should be the strengthening of households and community resilience through the discovery, dissemination and adaptation of more hopeful and innovative responses to the impacts of HIV/AIDS. It is critical to identify specific responses and innovations that make some households or communities fare better than others. In addition to supporting community capacity to respond, strategies should ensure that local communities play an integral role in developing an understanding of the underlying causes (both direct and indirect) and less-visible consequences of HIV/AIDS; likewise, ‘risk’ and ‘vulnerability’ are best defined and analysed from the perspective of those who are vulnerable and not outsiders (i.e. development practitioners) (Topouzis and du Guerny 1999). When participatory design and consultation was used in a food security project in Ethiopia HIV/AIDS was identified by community members as a main area of focus (World Vision Ethiopia 2006). Although the project’s major objective was to enhance household food security, community members recognized that HIV infection had negative impacts on rural households, particularly for women as the primary carers. The project logic reasoned that lower levels of sickness in the community would equate to a larger household labour force and less work for women. Participatory project design allowed programmers to draw on the ‘integrated’ understandings of community members, in this case recognition of the importance of gender and HIV/AIDS concerns for household food security. Thus, behaviour change communication (BCC) activities became a primary component of the food security initiative.

In effectively responding to the HIV/AIDS food security nexus, there is also a need to draw on what we already know (Bonnard 2002) and assess existing programs before embarking on completely new interventions. The HIV/AIDS lens is a conceptual tool designed to facilitate the mainstreaming of HIV/AIDS concerns into sectoral programming in a way that promotes the efficient targeting of resources. Developed and piloted under the RENEWAL initiative, the HIV/AIDS lens (Loevinsohn and Gillespie 2003) assists program managers and policy makers in prioritising existing programs and policies by their positive or negative contributions to HIV/AIDS prevention and mitigation in order to inform further
research, modification of existing activities, or new actions. The logical corollary to the HIV/AIDS lens is a 'development' or 'poverty' lens through which to analyse HIV/AIDS-specific programming. Thus, HIV/AIDS programming can and should be reviewed from the perspective of availability, utilization and access to food.

**SECTORAL RESPONSES THROUGH AN HIV/AIDS LENS**

There already exists a good deal of program guidance on the design of nutrition-relevant actions to prevent or mitigate HIV/AIDS impacts on individuals. Appropriate nutrition responses will vary considerably by stage of infection, and will also change when individuals are undergoing ARV treatment. Thus, for people living with HIV/AIDS, relevant specific objectives for a nutrition intervention might include: improving the quantity and quality of diet; building or replenishing micronutrients; preventing or stabilizing weight loss; preventing diarrhoea and other digestive problems; speeding recuperation from HIV-related infections; or managing AIDS-related symptoms that affect food consumption and dietary intake (Gillespie et al. 2001). It is clear that effective programs of nutritional care and support will improve the quality of life of people living with HIV/AIDS, not only by improving responses to treatment, but also by reducing time and money spent on health care and by keeping those living with HIV/AIDS active and productive (FAO/WHO 2002).

Nutrition support through home-based care (HBC) is increasingly becoming an important component of HIV programming. While food aid interventions are well recognized as vital components of HBC programs, such activities are seldom linked long term food and livelihood security. In the food aid project in Mozambique (Renzaho 2005b), the evaluation found that HBC programs providing nutritional support were instrumental in improving and prolonging the lives of recipients. Nonetheless, the evaluation highlighted the need to move from a fragmented to a more integrated approach to service delivery, linking food aid both to longer term livelihood security strategies and to prevention strategies for HIV/AIDS and other diseases. Similarly, a major focus of the HBC component of an HIV/AIDS prevention and care project in Malawi (Matinga 2005) was improving the nutrition status of PLWHAs through poultry farming, growing garden vegetables, food aid and spiritual support. Nonetheless, the evaluation noted that HBC groups did not know how access to nutrient rich food would be sustained when the project phases out. The evaluation concluded that “the project needs to liaise with food security programmes in order to reduce the effects of hunger on developmental initiatives” (Matinga 2005:39).

In high prevalence contexts, viewing nutrition programs through an HIV/AIDS lens may help make existing programs more relevant to the nutritional needs of affected households. For example, in light of HIV/AIDS, breastfeeding and complementary feeding programs will need to focus on the dissemination of clear information about MTCT. Nutrition programmers should consider the fact that HIV/AIDS-affected households will have greater time and economic constraints in the provision and preparation of appropriate foods, and adjust programs accordingly (Gillespie et al. 2001). The content of nutrition education programs and food aid packages themselves will also need to be adapted to nutritional requirements of HIV+ individuals, in line with WHO guidelines for people living with HIV/AIDS. Furthermore, such programs will need to consider how best to link the various components of
food security in an integrated response. A World Vision project in Mozambique which aimed to improve food availability and utilization in resource-poor, HIV/AIDS affected and female-headed households focused on improving crop production and diversity, food storage and nutritional awareness amongst these target households (World Vision Mozambique 2003). A key component of the project was the training of extensionists and farmers’ Agriculture and Nutrition Education Groups (ANEGs) in HIV/AIDS and human nutrition education. An evaluation report noted success in achieving a high level of knowledge about nutrition among target farming households, including the various sources of vitamins (particularly Vitamin A), protein and other nutrients. The project also emphasized dietary diversification and the enrichment of dishes with various local ingredients. The project thus represents the successful integration of food availability and utilization in the context of high HIV prevalence.

Home gardening provides an option for households to earn income and provide for nutritional needs, with significant potential for alleviating urban malnutrition and assisting households with people undergoing ART treatment (Drimie et al. 2006). Gardens are particularly suited to HIV-affected households because they are usually nearby and do not demand much labour. They can also help increase purchasing power from savings on household food bills and sale of garden products, whilst acting as a fall-back in lean seasons (FAO 2005). The food security project targeting vulnerable households in Swaziland, despite the difficulties of targeting noted above, provides a good example of how to address the nutritional impacts of HIV/AIDS on affected households (Dube and Khumalo 2004). Focussing on nutrition, HIV/AIDS, food preparation and hygiene education as well improved production and diversification of home gardens, the project offers several important lessons. The project was designed to address the fact that most vulnerable households had limited sources of information on nutrition and did not frequently consume vegetables, fruits, nuts or chicken. Training in trench gardening helped people realize they did not need expensive inputs to produce food in a backyard garden and that they could improve their diets without costly resources. The project linked to HBC groups in the area, providing medical supplies to chronically ill household members and training HBCs to transfer appropriate nutrition and hygiene messages. Nutrition training emphasized the use of food for prevention and cure of opportunistic infection, and ways to boost the immune system and appetite. One project beneficiary, a carer for an 8-year old chronically ill orphan, commented that since she had been taught to prepare balanced meals, the child had gained strength and appetite. She was also able to sell some of the garden produce for extra income. This experience points to the benefits of integrated and holistic response to nutrition in HIV-affected households.

Targeted food aid intervention is another key sector that has a role to play in assisting affected individuals, households and communities respond to the impacts of HIV/AIDS. As with all food aid interventions, the use of food aid as a response to HIV/AIDS comes with a number of caveats and, indeed, there are many situations where food aid will not be an appropriate response (see FANTA 2000). Nonetheless, by viewing the various modalities of food aid provision through an HIV/AIDS lens, it may become clearer how best to adapt food aid programming to high prevalence contexts. Slight changes to existing programs can help take into account the specific needs of food insecure HIV/AIDS affected families. For example, school feeding and take-home rations can target orphans to encourage school attendance and ensure continued care and support from their foster families. Food aid can also be linked to HIV programming in creative ways. The evaluation of the World Vision food aid
project in Mozambique (Renzaho 2005b:11-12) found that food aid may act as an incentive for those uncertain about their HIV/AIDS status to be tested, as support for the nutritional status of HIV+ people in the early stages of the disease was seen as improving care and treatment by facilitating ‘early and ongoing access to nutrition/health counselling, financial planning and support’. Similarly, the evaluation of food aid programs in Lesotho (Renzaho 2005c) found that Maternal and Child Health food aid encouraged people to go to the clinic for HIV tests, which has helped the health department track trends in HIV infection. This evidence points to the potential benefits of aligning food aid programming more closely with HIV/AIDS testing programs.

Beyond its more conventional role in care and mitigation efforts, food aid also plays a role in prevention. In an evaluation of a food security project in Lesotho (Renzaho 2005a), the retrenchment of Basotho men from South African mines was found to place women and young girls at increasing risk of exposure to HIV. While husbands had previously supported their families through monthly remittance, retrenchments resulted in household food shortages due to lack of money. Women and young girls took on the husband’s responsibilities as breadwinner, with young girls increasingly expected to engage in commercial sexual activities in order to feed family members. Mothers were reported to be abandoning their families in order to seek domestic or farm work in South Africa, where they often end up engaging in prostitution. The evaluation found that the food security project was having a positive impact on family cohesion. The greater availability of food and income through gardening and agricultural activities had eased the household strain of retrenchment and the need for young girls and women to engage in high-risk behaviour.

At present, many programs tack HIV prevention messages onto food aid packages in efforts to ‘mainstream’ HIV prevention activities. While this is a good place to start, food aid programmers can also broaden the reach of prevention activities by considering ways in which food distribution itself might contribute to the spread of HIV. The transport of food aid within a country requires long-haul trucking, whether with an organization’s own trucks or subcontracted to local transport companies. Since long haul trucking has been identified as a high risk behaviour, truckers should be included in behaviour change communication activities, including education, awareness, training and condom distribution (Gillespie et al. 2001).

Agricultural and livelihood interventions also have an important contribution in reducing susceptibility/ improving resistance to infection and decreasing vulnerability/improving resilience to the impacts of HIV/AIDS. HIV/AIDS affected households are constrained by labour, are risk adverse, have likely sold off assets, and are often stigmatized within communities; thus agricultural mitigation interventions should be ‘low-labour demanding, close to the homestead,… have a quick turnover [and] include safety net support to reduce risk associated with innovations (e.g. accompanied food aid)’ (FAO 2005:9). Furthermore, agricultural programming must take into account gender inequalities driving the epidemic, particularly in terms of land, property, credit and agricultural technologies and inputs.

One of the most well-established strategies for mitigating against HIV/AIDS- induced labour constraints is the use of labour-saving technologies to reduce the time spent on household and agricultural tasks and thus free up time for productive and income generating activities (du Guerny 2002). The suite of recommended activities and tools in response to labour shortfalls due to illness and death include (FAO 2003:21): ‘low-input agriculture, lighter ploughs and tools that can be used by older children, women and the elderly, improved
seed varieties that require less labour for weeding, intercropping, minimum tillage, as well as access to potable water, water harvesting and fuel efficient stoves that can free women for more economically productive activities.’ The FAO also recommends improved storage facilities to limit post-harvest losses. While conventional wisdom has advocated labour-saving technologies and crops in HIV/AIDS contexts, recent studies suggest that this blanket advice has been over-generalized, and furthermore that labour-saving technologies may in fact be detrimental if they further drive down wage rates (Jayne et al. 2004). As discussed above, labour is only one factor input, and is not necessarily the binding constraint to production. In households where cash constraints are limiting the ability to hire labour, a more appropriate response may be the arrangement of cash transfers (Drimie et al. 2006).

Preserving and transmitting agricultural knowledge across gender and generations in the face of HIV/AIDS must also be a key focus for mitigation efforts. Farmer field and life schools have been found to be effective in facilitating agricultural knowledge transmission and promoting the uptake of labour-saving technologies and practices, while Junior Farmer Field and Life Schools targeting orphans and vulnerable children between the ages of 12 and 18 also assist in transferring broader life skills and providing psycho-social support (Bishop-Sambrook 2004, FAO 2005). School gardens can also provide an entry point for discussions about agriculture, nutrition, HIV/AIDS and gender in ways that are suitable for children (FAO 2005). Local knowledge about agro-biodiversity is a valuable resource in terms of improving food security, nutrition and health care. The recording and sharing of site- and gender-specific knowledge, for example around traditional crops, neglected and under-utilized species, wild food and medicinal plants is thus an important impact mitigation strategy (Bishop-Sambrook 2004).

As with all other sectoral interventions incorporating HIV prevention messages into agricultural programs is a good start, but is not sufficient to fully addressing the impacts of the disease. A World Vision food security project in Zambia worked with farmers through farmer-led extension services to improve soil fertility, diversify crop varieties and improve post harvest technologies (World Vision Zambia). Although HIV/AIDS was identified as a ‘high likelihood risk’ due to the high prevalence rate (16%) in the region, and was cited as a ‘cross-cutting problem’ to be integrated into the overall program, the project itself did not explicitly address the issue of HIV/AIDS impacts on farming households. Instead, it cited the existence of other HIV/AIDS awareness and prevention campaigns, and noted that AIDS messages would be incorporated into extension and training sessions. An evaluation of the project found that these messages aimed to help farmers ‘to understand the devastating impact of the HIV/AIDS pandemic on farming in general and food security in particular so that they could adopt suitable preventative measures’. While this was a positive achievement, there was little reference to ways in which the project assisted participating farmers to deal with these impacts (or the ways HIV/AIDS affected the ability of farmers to volunteer to take part in the project). While some of the project activities may have helped reduce the effects of HIV/AIDS (particularly through low-input conservation farming techniques), without explicitly addressing the impacts of HIV/AIDS on farming households in the project design or evaluation, any unplanned outcomes remain unknown and likely insignificant. The challenge for food security initiatives, particularly in high-prevalence areas, is to venture beyond prevention to address the impacts of HIV/AIDS as well.

Projects designed to promote the marketing of agricultural products must consider the contributions of such interventions to halting the spread of HIV in rural communities. While
efforts to reduce rural poverty and limit the need to migrate are seen as reducing susceptibility
to HIV, additional cash coupled with the need to travel long distances to market produce may
in fact increase exposure to HIV infection (Drimie et al. 2006). HIV/AIDS mitigation through
market led growth strategies might include: raising awareness of HIV among groups
associated with agricultural production and marketing (e.g. petty traders, transporters, owners
of hotels or bars near the market); decreasing exposure to HIV by reducing the need to
migrate through improved agricultural production and increased local community livelihood
options (e.g. small scale irrigation, agro-processing, diversification, improved market
linkages); reducing vulnerability to AIDS impacts by reducing barriers to participation of
those affected or infected (e.g. social funds for orphans, income generating activities); and
changing market hours of operation to reduce risk environments (Gillespie 2005:21).

Finally, given the fact that poverty often induces risky livelihood strategies and the
financial constraints of HIV/AIDS affected households, a critical intervention both in terms of
prevention and impact mitigation is to introduce ways of increasing disposable income for
poor and HIV/AIDS affected households. Non-farm enterprises could include small-scale
commercial farming ventures such as poultry, livestock fattening or horticultural crops as
well as non-farm opportunities such as textiles, food processing and transport services
(Bishop-Sambrook 2004:26). Given the fact that HIV/AIDS-affected households represent a
‘high-risk’ investment, there may be numerous barriers to microfinance initiatives in highly
affected communities; however, there are examples of successful and sustainable micro-credit
and savings programs in high-prevalence African communities. Lessons from these
operations point to the need to allow NGOs with experience in HIV/AIDS play a larger role
in loan provision, and to move beyond standard micro-finance, linking credit provision to
prevention, care and mitigation activities (de Waal and Tumushabwe 2003).

CONCLUSION

For many poor households and communities, HIV/AIDS is just one more (albeit distinct)
stress weighing on already vulnerable livelihood systems. Yet, HIV/AIDS changes things: it
compounds existing vulnerabilities making it difficult for individuals and households to
‘cope’. It weakens resilience to other shocks and stresses, while at the same time increasing
the likelihood that people will find themselves in environments of high risk. Understanding
the factors conditioning both susceptibility and vulnerability to HIV/AIDS is essential if we
are to move towards a ‘fourth generation’ of response to the epidemic. In terms of poverty
and food security, this means integrating components of prevention, care, treatment and
impact mitigation, and taking a multisectoral approach to programming. In high prevalence
areas, viewing sectoral programming through an ‘HIV lens’ can to prioritise scarce resources
and ensure that program interventions are relevant to the realities of HIV/AIDS epidemics.
While much of this chapter has drawn on research and program experience in Africa, it is
essential that lessons be learned and shared with other regions where epidemics are spreading.
There is no blueprint for HIV/AIDS-food security interventions, and any program must be
flexible, responsive and context-specific. A review of the various reports discussed in this
chapter reveals that whilst some programs have successfully addressed HIV/AIDS and food
security concerns, there is still considerable fragmentation of approach. In light of current
knowledge, several recommendations can be made. These include: integrating components of HIV responses and taking a more holistic approach that recognizes both the causes and consequences of the epidemic; moving towards ‘multisectoral’ responses that view food security through an ‘HIV/AIDS lens’ and vice-versa; promoting community-driven responses, particularly at the design stage; coordinating efforts that better link short-term projects with longer-term development programs; employing relevant indicators to measure the impacts of interventions; and documenting and disseminating successful initiatives and lessons learnt to contribute to the development of international ‘best practice’.

REFERENCES


