

HIV/AIDS AND FOOD SECURITY IN AFRICA

A report for DFID

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Introduction

1. This paper summarises existing evidence and experience concerning HIV/AIDS and food security in Africa. It deals with two major issues, namely (a) the impact of HIV/AIDS on agrarian livelihoods and how this can be mitigated and (b) the implications of a concurrent generalised HIV/AIDS epidemic and an episode of acute food insecurity, what is termed 'new variant famine'.
2. Concerning HIV/AIDS and agrarian livelihoods, there is plentiful evidence, principally drawn from small-scale studies in eastern, central and southern Africa, dating back to the late 1980s (FAO 2002, FEG 2002, Haddad and Gillespie 2000, Barnett and Whiteside 2002). There is also a handful of significant 'success stories', notably from Uganda, which indicate the possibility of successfully mitigating the impacts of the epidemic on livelihoods (see Appendix A). However, despite the best efforts of the FAO, these insights and policy implications have yet to be adopted systematically by ministries of agriculture and major donors, and where they have been adopted, they have yet to be taken to scale.
3. Concerning HIV/AIDS and acute food insecurity and famine, there is a severe dearth of systematic information, although there are plausible hypotheses backed by informed observation that are consistent with the modest statistical data and micro studies available. The 'new variant famine' hypothesis of the first author of this paper has, since November 2002, become the leading 'alternative' paradigm for understanding this crisis, adopted by (among others), the heads of UNICEF and WFP and the UN Secretary General's Special Representative for AIDS in Africa in their advocacy messages. In the light of the current food crisis afflicting southern Africa, there is a pressing need to develop and refine this hypothesis, and develop policy tools and practical responses, both to meet the immediate demands of mitigating the current crisis, and to respond to its medium- and long-term implications. It is possible that the current crisis will escalate to a calamity on a scale not before seen in SSA.
4. Two pervasive themes are also addressed in this paper: why the HIV/AIDS epidemic is a distinct shock unlike others (so that we are 'not coping but struggling'), and why the issue has been neglected. It concludes with some scenarios for the future.
5. The International Fund for Agricultural Development (IFAD) describes household food security as 'the capacity of households to procure a stable and sustainable basket of adequate food' (IFAD, 1996). It incorporates (a) measures to enhance and stabilise household access to and availability of food across seasons and transitory shortages; (b) activities that would sustain food supply in the long term; and (c) constant attention to the adequacy of food while complying with nutrient and safety requirements and cultural preferences. Households are said to be food-secure when food availability, equal access to food, stability of food supplies, and quality of food are in balance with each other. For rural households, the equitable

availability of stable quantities of nutritious food depends on food production (using mainly family labor, land, and other resources); food purchase (using household income); assets that can be quickly turned into food or cash as necessary; and social claims on others through custom and societal structures such as family and community networks.

6. All aspects of this are affected by both the household-level impact of HIV and AIDS and the wider impacts of a generalised HIV/AIDS epidemic. As adult life expectancy in SSA drops to 25 or 20 years, or in some cases even less, our models for food security need dramatic revision. The basic assumptions built into economic and development analysis, farming systems research, livelihoods studies, and coping strategies research, that a household can command basic food entitlements in 'normal' times, needs to be questioned. Equilibrium models, in economics, demography and other branches of social and economic science, may no longer be valid.

7. Recent estimates by the UNAIDS indicate that 28.5 million adults and children live with HIV/AIDS in Africa, with some 2.2 million Africans having died of AIDS in 2001 alone (UNAIDS, 2002) surpassing any other cause of death on the continent. At least 10% of those aged 15–49 are infected in 12 African countries. The epidemic is spreading at a hitherto unimaginable rate in southern Africa. There is no indication of a ceiling on HIV prevalence rates. Despite some notable declines in prevalence rates in Uganda and parts of Zambia, and low rates in Senegal, the effects of the epidemic and associated mortality are going to remain for generations. According to UNAIDS estimates, assuming that prevention, treatment and care programmes will have a modest effect on the growth and impact of the epidemic in the next two decades, it is projected that, between 2000 and 2020, 55 million Africans will die earlier than they would have in the absence of AIDS (UNAIDS 2002). The worst is yet to come. The next decade will see a major onslaught on the foundations of African societies with the possibility of development and governance processes thrown into reverse (de Waal 2003).

8. Evidence suggests that the HIV epidemic is disproportionately affecting agriculture relative to other sectors (IFAD 2001). This is not because rates of HIV are higher among workers in the agricultural sector than elsewhere (indeed they are usually lower), but because the structure of the agricultural sector, especially the smallholder subsector, is such that it is much less able to absorb the impacts of the human resource losses associated with the pandemic. Moreover this impact on agriculture, is likely to be far reaching as over 70% of the population depend on the sector for livelihood. In agrarian societies, the HIV/AIDS epidemic is intensifying existing labour bottlenecks, increasing widespread malnutrition; proving a barrier to traditional mechanisms of support during calamities, massively adding to the problems of rural women, especially female-headed farm households arising from gender division of labour and land rights/resources, and deepening macroeconomic crises by reducing agricultural exports. In extremis, it is creating the 'new variant famine.'

9. Among the reasons why HIV/AIDS has this severe impact are the pre-existing fragility of most African farming systems, the distortions built into international markets in agricultural produce, and the role of the agrarian sector in most African countries as an unacknowledged social safety net. Under the strain of the HIV/AIDS epidemic, the more vulnerable farming systems are simply breaking down, threatening a social calamity on a scale not witnessed before in the continent.

‘Not Coping but Struggling’

10. Two concepts of ‘coping’ must be identified. One is the ‘traditional’ concept of livelihood coping mechanisms under the threat of drought or other stresses (de Waal 1989; Swift 1993; Davies 1995). The basic premise of this work is that drought-stricken households have sufficient resilience (through use of social networks, fall-back resources and strategies, informed by experience and skill) to preserve a socially-acceptable livelihood. The second is the application of this concept to households and communities afflicted by HIV/AIDS (Rugalema 1998; Baylies 2002). Analyses of ‘coping’ with HIV/AIDS suggests that the word is in fact a misnomer. In the vast majority of cases, afflicted households do not ‘cope’ in the sense of succeeding to preserve an acceptable livelihood, but rather they ‘struggle’ and in fact commonly dissolve entirely (Rugalema 2000). The very concept of ‘coping’ distracts policymakers from the enormity of the crisis. HIV/AIDS cannot thus be considered ‘a shock like any other’ (Baylies 2002). It has unique characteristics, because it kills with a relentless inevitability. The following are key elements to this failure to cope:

- (a) While individuals in most affected households manage to survive, the households themselves break up and their members, orphans, widows and the elderly, join other households.
- (b) Knowledge of crisis management is limited. Therefore decisions made by household members are sub-optimal and have major costs in the medium and long terms. Responses such as sale of household assets, withdrawal of young girls from school to help with domestic and farm work merely reflect short-term survival.
- (c) The wider impact of the HIV/AIDS epidemic on wider social, economic and environmental systems entails changes and costs to the farming system, social and institutional infrastructure and the maintenance of physical infrastructure, all of which tend towards impoverishment.

11. In the current southern African situation, we are faced with the compound stresses of HIV/AIDS and drought-induced threats to food availability and livelihoods. This creates various vicious feedback loops that condemn the worst afflicted sectors of society to a downward spiral that has no obvious end point save utter destitution and household dissolution.

12. The following two figures illustrate this. ‘Sensitivity’ is the extent to which a society or household suffers from an external shock, and ‘resilience’ is the extent to which it can recover. In a ‘traditional’ society, this is shown in figure 1, in an AIDS-impacted society, by figure 2.

Figure 1: Response of traditional agrarian society to a shock

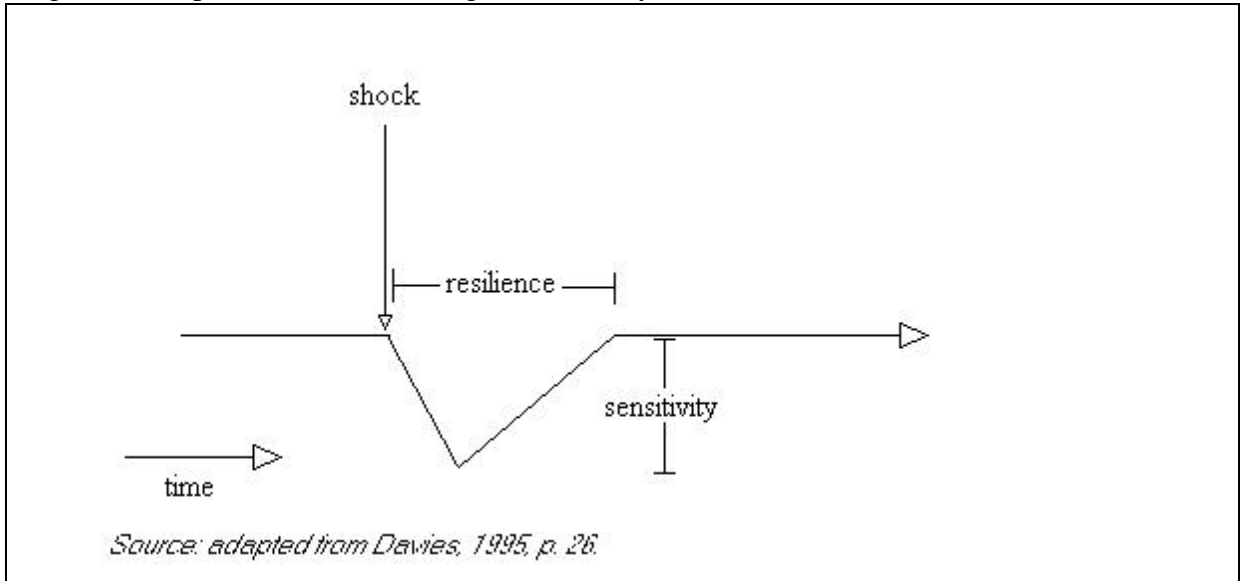
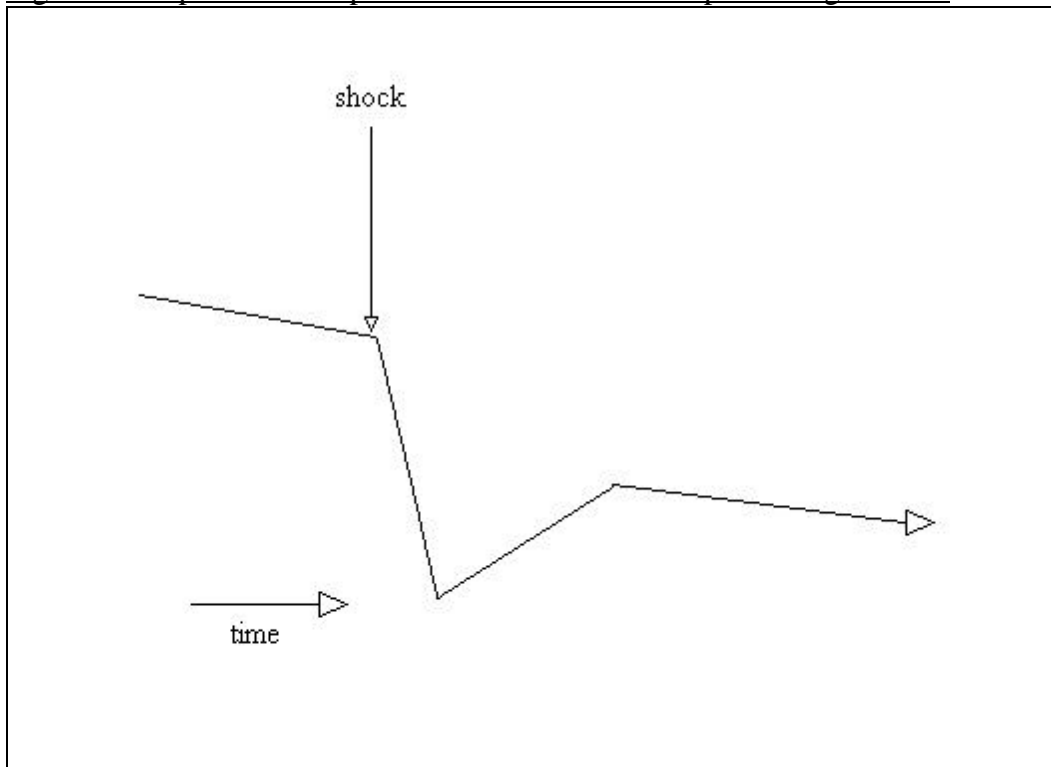


Figure 2: Response to compound shock of HIV/AIDS plus drought/flood.



13. In all situations, however, some individuals and groups fare better than others depending on wealth characteristics, gender, generational structure, livelihood structure, and social networks. One of the principal impacts of the HIV/AIDS epidemic is to increase inequality. Some may even benefit from the impoverishment of others, for example by obtaining access to land (through dispossessing dissolving households) or by hiring cheap labour. For this reason, among others, many of the wider impacts of the HIV/AIDS epidemic may not be evident in aggregate statistics.

We are Late: The Problem has been Neglected for Too Long

14. Despite the availability of knowledge about the impacts of HIV/AIDS for more than a decade, policy makers in African governments and donor institutions have been very slow to absorb the lessons and even slower to apply them (Barnett and Blaikie 1992; Barnett and Whiteside 2002; Husain and Badcock-Walters 2002).

15. There are many reasons for this neglect. One is the fact that HIV/AIDS has been perceived almost entirely as a health issue, with a focus on prevention, treatment and care. Thus the approach to HIV/AIDS in farming systems has been to seek to minimise rates of HIV among farming communities. This is of course essential, but even if successful, does not address the issue of how to mitigate the impacts of the current levels of HIV.

16. Denial has been a problem at all levels. As recently as October 2002, the Joint Conference of African Ministers of Finance and Economic Planning, held in Johannesburg, passed off with scarcely a mention of the impact of HIV/AIDS on national economies. At the level of individual households, there is a pervasive attitude that HIV/AIDS is a matter for individual or family concern, not for communal or societal responsibility (Baylies 2002). For that reason, households may be reluctant to attribute the overall hardship and impoverishment of society to the HIV/AIDS epidemic, or to ask for assistance, and may instead attribute their plight to 'external' factors such as drought.

17. A related reason is that the combination of the impact of the HIV/AIDS pandemic and widespread systemic dysfunction in African countries means that the problem appears just too big to deal with. Anyone who spells out the ten-year implications of the HIV/AIDS epidemic risks frightening her or his audience with a 'doomsday scenario.' Most policymakers simply don't want to hear this.

18. Statistical measures have failed to pick up some of the important trends. Part of the reason for this is that key instruments such as analysis of national census data are very slow processes. A second reason is the unreliability of many figures. Third, particularly relevant to agricultural statistics, there are many compounding factors such as year-on-year variability in production. Lastly, no-one has really been looking.

19. There is a need to identify and utilise measures that are sensitive to AIDS-related distress. An illustrative example is statistics for cassava production in selected southern African countries. In 'normal' agricultural development, cassava would be abandoned in favour of crops such as maize. An increase in cassava production is highly suggestive of a reversal of agricultural development trends. (See table 1, below.)

20. There need not be a conflict between prevention, care and mitigation interventions. In fact they are complementary. Interventions need to be designed and assessed not only in terms of their ability to mitigate the current impacts of HIV/AIDS, but also in terms of their ability to reduce susceptibility to future infection and vulnerability to various types of impact. Effective mitigation can be one of the best methods of effective prevention (Topouzis 2000). For example, supporting sustainable livelihoods can reduce future exposure to infection, although this is not always the rule. Sustainable livelihood options can help reduce the incentive to undertake livelihoods that are built either on risky behaviour (e.g., commercial sex workers), or on long periods of non-residence (migration is one of the chief risk factors in HIV transmission). Studies in Uganda carried out in the early 1990s also found out that AIDS

prevention strategies built along HIV/AIDS counselling and testing, care giving and support to families affected by HIV/AIDS provided a package for effective prevention and mitigation that was non-conflicting.

HIV/AIDS and Rural Livelihoods

21. A growing literature on the impact of HIV/AIDS on rural livelihoods documents a range of impacts, all of which contribute to impoverishment, and a small number of effective responses.

Loss of household labour quality and quantity

22. This is a key factor that impacts throughout the productive cycle. It includes the following:

- (a) The illness of productive members of the household, especially women, leads to a double loss. The productive individual works less, and there is a major demand for caring for her or him. Time studies indicate that households with sick individuals spend far less time on agricultural activities than others, leading to neglect of fields, decrease in planted area, switch to less labour-demanding crops, etc. (Laketch 2002).
- (b) The death of an adult is often disastrous, leading to sharp declines in production and income. The impact of a death depends upon the age, role and gender of the individual. With AIDS, of course, there is an increased likelihood of both spouses succumbing, compounding the loss (Webb and Mutangadura 1999).
- (c) There is a diversion of labour from productive activities to funerals. The cost of funerals often impoverishes households, especially when the slaughter of livestock is required.
- (d) The death of an adult from HIV/AIDS is usually more disastrous than if it is from other causes. This is almost certainly because of the protracted nature of AIDS and the high labour costs and other expenditures associated with care and treatment. One of the few studies of the impact of AIDS on rural production comes from a communal area in Zimbabwe. This found that an adult death resulted in a 45% decline in a household's marketed maize, but where the cause of death was identified as AIDS the loss was 61% (Kwaramba 1998).
- (e) The psychological impact of the illness and death of an individual commonly leads to depression and a lack of motivation to work hard among other family members.
- (f) Declining health of other family members. Children and adults in AIDS-afflicted households are less well nourished, more likely to be sick, and more likely to die from all causes. Evidence from eastern and southern Africa shows that households affected by HIV/AIDS not only are eating fewer meals and consuming poorer foods, but also are investing less in the health of surviving members, losing even more labour to frequent morbidity.
- (g) The loss of skills and experience from a deceased adult can severely impact upon household viability. Key skills in farming, marketing, access to credit, or responding to adversity may be lost and not replaced. HIV/AIDS breaks the chain of knowledge transfer and labour sharing between generations. As a result, survivors, including both children and the elderly, often cannot manage the family farm due to lack of knowledge and experience.

23. Households faced with these labour shortages and loss of skills tend to adopt the following responses:

- (a) Intra-household relocation of labour including removal of children especially girls from school, increased reliance on orphan labour. Monitoring school dropouts and absenteeism is a good indicator of community distress in this respect.
- (b) Relying on the elderly, children and extended family networks to cover for ill or deceased adult household members.
- (c) Shifting in composition of crops from labour intensive to less labour intensive, from cash to subsistence, from vegetable and relishes to survival foodstuffs for carbohydrates (cassava, sweet potatoes and maize, from wide range to narrow range of crops) (Baier 1997). See table 1, below.
- (d) Complete loss of livestock or shifting composition of animal stock from cattle (large stock) to pigs, goats and chicken (small stock).
- (e) Off-season (usually late activities) planting often-increasing vulnerability to pests and diseases.
- (f) Compromising critical land conservation and soil protection activities such as mulching, terracing and fallowing and replacing these with bush burning and abandonment of weed and pest control. There is evidence for the deterioration of controlled agricultural environments as a result of HIV/AIDS (Barnett and Blaikie 1992). This is often associated with a shift to root crops. A study in Rakai in Uganda in 1993 found a decline in the banana production and plantations reverting to bush on account of inability of households to carry out pruning, control weevils and leaf diseases, weeds and de-sucker. Most of the family labour had been diverted to caring for the AIDS sick and mourning. As a result in the majority of homes, their much reduced farm labour had been concentrated on growing sweet potatoes and cassava, which had replaced bananas as a staple (Tumushabe et al. 1993).
- (g) Relocation of household members especially children and orphans to wider social networks. Thus the burden is shared more widely. However, the capacity of the 'extended family' to cope is becoming highly questionable.
- (h) Reduction in household quantity and quality/variety of food household leading to both adult and child malnutrition.
- (i) Diversification of household activities towards less labour demanding work such as apiculture and off-farm income generating activities such as trade. This can spread the labour requirement more evenly throughout the year, thus minimising problems associated with labour bottlenecks. Supporting this strategy is perhaps the most viable method of impact mitigation (see Appendix A).
- (j) Withdrawal from marketing activities in favour of household-based pure subsistence.
- (k) Where families were originally economically better endowed, there are cases of replacing human labour with technology, e.g. through oxenisation and increased use of fertilisers to replace loss of male labour. It should be noted that when a better-off household ceases to employ labour, the effect on poor non-AIDS afflicted households in the neighbourhood can be severe. For example, FEG (2002) found that in some communities in Kenya, the impact of AIDS on a wealthy household led to the loss of labouring income for three poorer households.

Table 1: Cassava Production in selected countries

	1990	1993	1996	1999	2000
Malawi	144,800	216,000	534,500	895,000	900,000
Mozambique¹	4,590,400	3,511,200	4,734,000	5,352,800	5,362,000
Zambia	640,000	744,000	744,000	970,800	815,200
Zimbabwe	95,000	130,000	150,000	170,000	175,000

Source: FAO

The labour impact at national level

24. There is controversy over the overall labour impact of the HIV/AIDS pandemic. Demographers predict a largely unchanged dependency ratio in an AIDS-afflicted population. However, this masks important imbalances in the labour supply, relating to shifts within the adult population. An AIDS-impacted society contains fewer mature adults (especially women) and more teenagers and other young adults. The latter group are likely to be less socially engaged and contribute less to the overall workforce. Predictions for the future size of the national workforce are shown in table 2.

Table 2: Projected labour force losses in Southern Africa due to HIV/AIDS

	Overall labour force		Agricultural labour force	
	By 2005	By 2020	1985-2000	1985-2020
Botswana	-17.2	-30.8	-6.6	-23.2
Lesotho	-4.8	-10.6		
Malawi	-10.7	-16.0	-5.8	-13.8
Mozambique	-9.0	-24.9	-2.3	-20.0
Namibia	-12.8	-35.1	-3.0	-26.0
South Africa	-10.8	-24.9	-3.9	-19.9
Tanzania	-9.1	-14.6	-5.8	-12.7
Zimbabwe	-19.7	-29.4	-9.6	-22.7

Sources: columns 2 and 3, Husain and Badcock-Walters, 2002: 13; columns 4 and 5, FAO

25. Moreover, the dependency ratio changes tend to cluster at the levels of household, extended family and community, so that while some are relatively less affected, others are disastrously hit. This clustering effect can be likened to a swiss cheese: there are pockets of impoverishment, initially at household level, that are disastrous in themselves and gradually erode the cheese itself.

26. This inequality effect is associated with increased exploitation of the most vulnerable. For example in Rakai, Uganda, homes, which had not lost many members or those that still had members that could send remittances from towns had sustained their banana plantations and were benefiting from the cheap labour of orphans from the homes which had lost many people to AIDS (Tumushabe et al. 1993). Any monitoring or analysis should pay attention to the minority who benefit from the overall social crisis.

¹ The high production in Mozambique in 1990 is probably related to the impact of the war which was still ongoing at that time.

Reduction in available disposable cash income and asset base

27. The income available to AIDS-afflicted households declines as the disease progresses through the household, and during and after the deaths of adults. This is amply documented by studies by the Food Economy Group (FEG 2002) and by various studies by Save the Children Fund (e.g. SCF 2002).

- (a) Reduction in food consumption (Rugalema 1998; Barnett et al 1995). Inability to afford foodstuffs that require cash inputs such as meat or food supplements for children or the sick (Tumushabe 1993). Reduction in quality of foods and substituting purchased relish with indigenous or wild vegetables (SAfAIDS 1998).
- (b) Erosion of natural asset and financial base of AIDS afflicted households to finance HIV/AIDS health needs and meet immediate food needs. Undermining of collective user groups mechanisms for increasing resources (Haddad and Gillespie 2001).
- (c) The shift from cash-based to subsistence agriculture. This is linked to the inability to hire external labour, and reduced capacity to substitute for labour loss with mechanisation, chemicals and fertilisers.
- (d) Sale of productive assets including domestic animals stock as in Namibia (Matanyire and Timpo, 1999) and Uganda (Barnett and Blaikie, 1992; Tumushabe et al., 1993; Haselwimmer 1994; FAO 1995). This leads to loss of animal products, reliable income and food reserve base in times of stress and draught power and organic fertilisers.
- (e) Consumption of seeds. Direct sale of food reserves to finance immediate increased health expenditure.
- (f) Sale of land to obtain medicare and cater for immediate food needs (FAO 1997; Tumushabe 1993; Haselwimmer 1994).
- (g) Loss of land through disinheritance and dispossession, especially where widows' property rights are not protected.
- (h) Loss of remittances if affected person was a source of remittances.
- (i) Limitation to accessing credit as HIV/AIDS-affected households are considered higher risk by commercial lenders.

Declining capacity of social environment to offer support

28. Traditionally extended family, neighbours, other non-formal networks provided a means of reducing an individual household's stress emanating from labour loss, unprecedented food shortage, ill health, child birth and increased expenditure requirements. This included provision of labour for productive activities, care of dependants, loans and financial gifts, assistance with the care of the sick, as well as food for funeral and mourning ceremonies. This is now changing.

- (a) Declining capacity: reduced ability of social support network as key potential contributors die off. Higher AIDS rates in urban areas particularly impact upon this.
- (b) Increasing demand: too many and frequent HIV/AIDS deaths increasing the demand for such social support. This is reflected in an increasing army of destitute orphans in need of support.

- (c) Exposure of vulnerable widows and orphans to land and property grabbing relatives. It is important to note that the extended family system is not always benevolent.
- (d) The need to exploit orphans' labour and potential income from bride wealth especially if they are girls.
- (e) Reversal of urban-rural support networks. Rather than rural households relying on urban relatives for assistance, the reverse is true. This is partly due to burden shifting by the formal sector (Rosen and Simon 2001), partly due to the tendency of urban people to 'return' to rural areas to die and be buried, and partly because of the assumption that it is easier for orphans to be supported in rural areas, so that urban orphans are sent to rural relatives to be looked after.

29. The impact of and response to declining capacity of social environment to offer support includes the following:

- (a) Break-up of communal/group activities.
- (b) Individualism and anti-social attitudes developed towards AIDS affected households (Haddad and Gillespie 2001).
- (c) Orphan-care including the provision of production management capacity, being left to the elderly and child heads of households.
- (d) Abandoning of orphans or improperly caring for them and increased reluctance of relatives to provide food and other care to increasing number of orphans.

The female face of HIV/AIDS

30. The HIV/AIDS epidemic affects women more than men. Increasingly, women are infected more, and younger than men. Moreover, most of the additional burdens of responding to the household level impacts of AIDS fall upon women. They are the main producers of food, the main carers of the sick and children. They bear the greater burden of economic production and social reproduction in rural societies.

31. Widows with dependent children became entrenched in poverty as a result of the socio-economic pressures related to HIV/AIDS. Many of them lose access to land, labour, inputs, credit and support services. HIV/AIDS stigmatisation compounds their situation further, as assistance from the extended family and the community, their main safety net, is severed (UWESO 1999).

Impact on agricultural extension services

32. AIDS affects agricultural extension services through eroding the human resources and institutional capacity of the service. HIV/AIDS disrupts organised activities owing to frequent ill health and funerals of contact farmers and intended beneficiaries. Extension staff, and camp leaders, Zambia, said that:

'AIDS is leading to loss of experience and knowledge transfer is more difficult. When coupled with the loss of farmers and experienced family managers, household productivity is negatively affected. Moreover, the people dying are the young adults leaving a vacuum. The loss of any key persons in the farm extension chain leaves a vacuum for project activities. They often have to come to a standstill until replacements are made which is usually not easy.'

33. A study in Zambia and Uganda (IFAD 2001) discovered that:

- (a) Increased funerals in the communities were leading to cancellation or postponement of expensive planned activities and make impossible timely attainment of programme targets.
- (b) Families directly affected by AIDS sickness or death were prevented from participating in group organised extension activities through lack of adult representation or the shift in family priorities towards caring for the sick or searching for food rather than attend extension meetings.
- (c) Illness health and death of staff and extension contact farmers/community organisers lead to loss of expensively attained knowledge and experience and low adoption of technologies and agricultural innovations. In one district office of Zambia, four of the 22 extension staff members had died in the one year prior to the mission and three of these, according to the officer who reported this incident, were AIDS cases and similar high staff mortality was reported in Uganda.
- (d) Increasing staff workload through the need to train community workers, group leaders, and farmers to replace those trained but ill or dying off or need to attend to AIDS related eviction of orphans and widows from land and property.
- (e) Increased domestic pressure, low incomes of staff, trauma and burn out on account of having to look after sick relatives or attend funerals.

34. Although systematic surveys are not available, it is probable that agricultural extension workers have higher levels of HIV than the general population. They are mobile and relatively affluent in poor communities, which are known risk factors for HIV. It is probable that they are dying more quickly than they can be trained. In a number of countries, agricultural extension services are on the verge of collapsing entirely because of the HIV/AIDS epidemic. The pre-existing weakness of the services predisposed them to this structural crisis.

Policy and Programme Responses to Mitigate the Impacts of HIV/AIDS

35. There are some examples of good practice that can maximise the negative impacts of HIV/AIDS. The challenges are to overcome serious and worsening capacity constraints, and take them to scale.

Capacity to withstand this shock

36. Several factors help determine the capacity of the household to withstand these pressures. The most important of these is the pre-existing vulnerability of the farming system, especially to labour constraints. An analysis of this can provide a framework for identifying what is workable and what is not.

- (a) Rainfall distribution. Farming systems that are highly reliant on unimodal rainfall typically have severe labour bottlenecks at the time of planting and weeding. In these systems, even a small decline in labour availability at the critical point in the agricultural cycle can have disastrous impacts. By contrast, if rainfall is more evenly distributed throughout the year, the options for producing crops with lower labour availability are greater. This factor helps to explain the lesser impact of

HIV/AIDS on the food production of Uganda and north-west Tanzania, than on some southern African countries.

- (b) Relative land scarcity. In systems where land or capital is the key scarce resource, then loss of labour availability will be less damaging.
- (c) Gender roles. In systems with inflexible gender task allocations, it will be harder for a stricken household to adapt.
- (d) Wider labour provision systems. Where there are mechanisms for communal labour provision, or greater flexibility in age-specific labour roles, systems are more resilient. However, most traditional communal labour practices have long since broken down.

37. For some countries (e.g. Ethiopia) there is however a marked absence of literature (Laketch 2002). To date, HIV/AIDS levels in rural Ethiopia are lower than in southern Africa, although hard data are few. But it is probable that, because Ethiopian farmers are already impoverished and vulnerable, and because there are major labour bottlenecks during the agricultural cycle and often a very inflexible gender division of labour tasks, that the impact of even a relatively modest HIV/AIDS epidemic on Ethiopian agriculture will be extremely adverse.

Addressing labour scarcities

38. Among the options to help rural people to cope with AIDS-related labour stress and arrest increased food insecurity there is a need to consider the following (Gari 2002):

- (a) Promote non-labour intensive crops (without compromising the need to address overall nutritional needs).
- (b) Promote agricultural diversification to better diffuse workload through time. This depends upon rainfall and the natural environment.
- (c) Implement community water harvesting and management systems to improve the production/labour ratio.
- (d) Encourage community farming oriented to support food security and nutrition among the community's most vulnerable households and people, including female-headed households and community-based school feeding programmes.
- (e) Promote crops and farming systems that reduce vulnerability to ecological and social factors, such as crop genetic resources that are resistant to drought, and agricultural diversification as a means to strengthen subsistence components and reduce livelihood vulnerability to erratic market fluctuations.
- (f) Enhance food utilization, such as ensuring that vegetable production does not serve only marketplace trading but also household nutritional needs. Increase food equity within the household, ensuring equal access to food and adequate nutrition among all family members, particularly children, women, and ill people.

39. There is also a need for farmers to become smarter and more motivated. The subjective factor is critically important. Toupouzis argues that for farmers to be motivated to invest in development other than focusing on daily survival, they need training and education to analyse their situations and find solutions that they can implement by themselves. For this to happen, they need guidance from institutions or NGOs, for example in the form of workshops (Toupouzis and du Guerny 1999).

Agricultural extension and research

40. One possible arena for intervention is agricultural extension. Noting the very serious capacity constraints outlined above, there are potential roles for a reinvigorated agricultural extension approach. A new approach needs to find ways and means of doing more with less: identifying the critical new and expanded needs of farming households, while applying adaptive management and streamlined training methods to produce a leaner, simpler institution.

41. In principle, fundamental policy changes and new strategic approaches are urgently needed to meet the extension needs of AIDS affected families, targeting especially the resource-poor, small-scale women, grand-parent and child headed households. In this extension service system new farmer education/training activity will need to integrate AIDS education, counselling, nutritional education as well as the usual production and farm improvement techniques of extension. The main targets in this system will be meeting the specific needs of the more vulnerable AIDS affected and the poorest of households to ensure their production does not collapse and stem their vulnerability to food insecurity. In the full impact scenarios, the target of extension service will for the time being be sustaining survival, rather than improving the household incomes through the sales of farm produce.

42. Baier (1997) recommends reorientation of extension programmes to the effects of the HIV/AIDS epidemic, emphasising problem-solving activities for affected households and communities (focusing on training and extension activities for women, orphans and youth) and on the initiation of collective efforts to strengthen community and group organization in support of traditional coping mechanisms to mitigate the effect of the disease. Likewise Mutagandura (2002) points out there is a need for a paradigm shift in the current agricultural research and extension methodologies to focus more on technologies to mitigate the impact of HIV/AIDS in regard to labour and income constraints including:

- (a) Focusing on appropriate technology already available for adaptation by resource-poor agricultural systems including inter-cropping and mulching to reduce weeding time, zero or minimum tillage to reduce the need for expensive ploughs and oxen, using trap crops to attract pests away from other crops.
- (b) Integrating gender and age issues into extension programmes, since women and youth are emerging as the leading players in smallholder agriculture in the HIV/AIDS era. This should include giving priority to the integration of gender issues into extension such as improving women's participation in extension activities. In addition, assistance (including appropriate legal support for HIV/AIDS widows) could be provided to vulnerable groups/ communities through multidisciplinary HIV/AIDS programmes.

43. Meanwhile, a new agenda is needed for agricultural research in the era of HIV/AIDS. Development needs to focus on:

- (a) Development of and rapid adaptation of low-input but high-yielding food and cash crops, high value food crops that are drought resistant.
- (b) Lighter ploughs useable by women and young people. Similar animal weeding technology.
- (c) Development of animal breeds that require less care.
- (d) Development, or packaging of chemicals for dipping livestock at individual levels.

- (e) Harnessing farmer participation in the process of reorientation of research and extension services so as to build on indigenous knowledge and emerging needs of farmers.
- (f) Strengthening and expanding to new areas the existing community based initiatives targeted at alleviating labour and capital constraints such as customary labour-sharing arrangements, traditional savings or other mutual assistance associations to ensure that households in need have a source of labour or capital.

44. The integration of HIV/AIDS education and prevention activities with impact mitigation is also important. Tumushabe (2001) emphasises the need to quickly orient agricultural extension staff towards identification of the impact of AIDS on their activities and mechanisms of dealing with crises in the communities where they perform their activities. The same principle holds in reverse. Organisations involved in AIDS work, including NGOs working with AIDS counselling, HIV prevention and community initiatives, should become equipped with practical skills and means of offering livelihood guidance to AIDS affected families. This advice should also be provided care givers, groups offering care and health workers. The advice packages could include quick and practical means of sustaining household food security, improving nutritional access and addressing incomes challenges. This would create an integrated AIDS-extension service, fulfilling existing mandates for AIDS education, prevention, counselling, treatment and care alongside advice and support to livelihoods.

45. In each specific locality the following questions will need to be considered in order to best integrate impact mitigation/livelihood protection with other AIDS-related activities:

- (a) What elements of HIV/AIDS (prevention, homecare and visiting, AIDS patient care giver counselling etc.) are going to be integrated in each component of the on-going programme?
- (b) Who needs to be targeted in carrying out the implementation of the re-organised extension activities (the extension worker, group leaders, heads of households, women, orphans, youth, NGO workers not necessarily involved in agricultural extension) and how?
- (c) Why is it necessary to integrate HIV/AIDS mitigation components in extension service delivery? Of what benefit will the integration of HIV/AIDS be to the component?
- (d) How is the integration going to be carried out/ what mechanisms and resources as well as time schedules need to be followed?

46. There is a need for research into the impacts of HIV/AIDS on agricultural extension services and other community development outreach programmes. Currently there is little precise information on this. Other areas of research needs relate to the lack of precise information on the policy and legal aspects accruing out of the phenomenon of HIV/AIDS-related morbidity and mortality and its implications on production and gender/shifting changes in household headship structures (child and female headed households for instance). These studies can take the form of rapid rural assessment surveys but with a bias towards quantifying the study variables. The findings need to be quickly fed into the design of problem-solving, action-oriented interventions and for the planning of appropriate extension strategies as well as changing policies on empowering women by providing relevant training and extension advice; strengthening of traditional coping mechanisms; and the promotion of

cost-effective survivor assistance programmes for orphans, widows/widowers and elderly farmers.

Micro-credit

47. Under ordinary circumstances an AIDS afflicted household is a high-risk investment unit. Some literature points to a rather grim picture with regard to operating micro-finance initiatives (MFIs) within HIV/AIDS affected communities (Parker 2000). The very sustainability of borrowers is in question (Baylies 2002). These studies cite:

- (a) Inability of AIDS care givers to pay sufficient attention to the income generating projects for which funds have been borrowed;
- (b) Decline in demand for local goods and services, which affects informal sector enterprises and hence micro finance clients;
- (c) Higher exit rates as AIDS affected clients fall out resulting in losses to the MFIs and requiring new and hence increased operational expenses, in training replacements;
- (d) The illness and death of MFI staff, trained extension leadership and their relatives leading to absenteeism and human resource loss.

48. However as Parker points out, with HIV/AIDS 'giving up' or 'doing nothing' is simply not acceptable. Innovative approaches have to be made. Most micro-finance interventions are in pilot stages and pose a challenge to donors and AIDS-mitigation programmes to coordinate dialogue, research and assessment, and to fund the necessary innovations and their evaluation.

49. A number of MFIs operating in sub-Saharan Africa are offering products designed to mitigate the impact of the epidemic on either the institution itself or on its clients, or both. Among the products currently being offered are credit and health insurance, as well as conventional loans and savings products. Organizations such as FINCA, FOCCAS/Uganda and Opportunity/International are working about the impact of HIV and the consequences for sustainability and client survival (Parker 2000). Results indicate that the provision of micro financial services in an HIV context is not incompatible with the MFI's goal to reach operational and financial sustainability. For instance FINCA/Uganda reports financial sustainability of 126% as of July 2000.

50. Further evidence from Uganda indicates that micro-credit interventions can be used to sustain traditional community resilience mechanisms and improve nutritional levels of households affected by HIV/AIDS. Lessons generated indicate that it is possible to carry out successful and sustainable micro-credit and savings operations with AIDS-affected families. A fine example is the UWESO programme (Appendix A). This has achieved very high levels of return on credits extended to families caring for orphans (both children orphaned by AIDS and those orphaned by other factors such as war). The UWESO experience points to:

- (a) The necessity of reduced (sub-market) interest rates, and de-linking of operations from pure financial institutions to NGOs that have experience and work with HIV/AIDS affected clientele and their communities;
- (b) Strong cohesion within the recipient groups, who assist one another and pool funds for expenditures such as ARVs for members who are living with HIV/AIDS;

- (c) The need for real opportunities for diversifying into income generating activities such as petty trading and market gardening.
- (d) Going beyond standard micro-finance to linking credit provision with HIV/AIDS prevention, care and mitigation activities. This includes targeting AIDS-affected households using stigma minimising approaches such as caring for orphans and giving these households a stake and leadership role in all operations of the micro-credit operations.

51. Other advantages that micro finance institutions possess include the fact that they are well positioned and equipped to reach the informal sector in an efficient and sustainable way. For instance, micro finance can help ease the financial and related burdens of those living with HIV and can help to promote behaviour change, vital to stemming the tide of infection and preserving a future for generations of Africans to come. Some MFIs in SSA offer HIV/AIDS education, conducted by either their own staff or via partnerships with AIDS service organisations. Another advantage that MFIs have is that their regular loan repayment meetings of clients can be utilised to facilitate community empowerment, extend useful agricultural innovation messages and act as a mechanism for home visits to offer follow-ups.

52. Of necessity, training and skills development at all levels from beneficiaries to the national coordinating officers should be undertaken. No matter how well-trained the officers and community leaders may be, the new environment, changes in family and community demands will require continuous training of beneficiaries and staff of the organisation. This also entails an ability to diversify activities, which can be got from training coupled with a conducive business environment, and creating resource mobilisation and advocacy skills at all levels as part of the process of maturity and sustainability building for the organisation.

HIV/AIDS and Acute Food Insecurity

53. The advent of a generalised HIV/AIDS epidemic in combination with drought and food crisis threatens to create 'new variant famine' (NVF) across many parts of southern Africa (de Waal and Whiteside 2003). Unlike the issue of HIV/AIDS and the protection of rural livelihoods, there is very little literature on this subject, so the following section is largely exploratory.

54. The 'new variant famine' hypothesis posits that we are facing a new kind of acute food crisis in which there is no expectation of a return to either sustainable livelihoods or a demographic equilibrium. To the contrary, the impacts of HIV/AIDS on agrarian households mean that they are (a) more susceptible to external shocks and (b) less resilient in the face of these shocks. NVF also threatens a vicious cycle of increasing mortality from multiple causes.

55. The NVF hypothesis does not discount other causes of the current crisis (Devereux 2002, World Development Movement 2002). These include drought, floods, low commodity prices, mismanagement of food reserves, liberalisation of services, etc. Rather, the adverse impacts of these factors are compounded by HIV/AIDS.

Lack of resilience

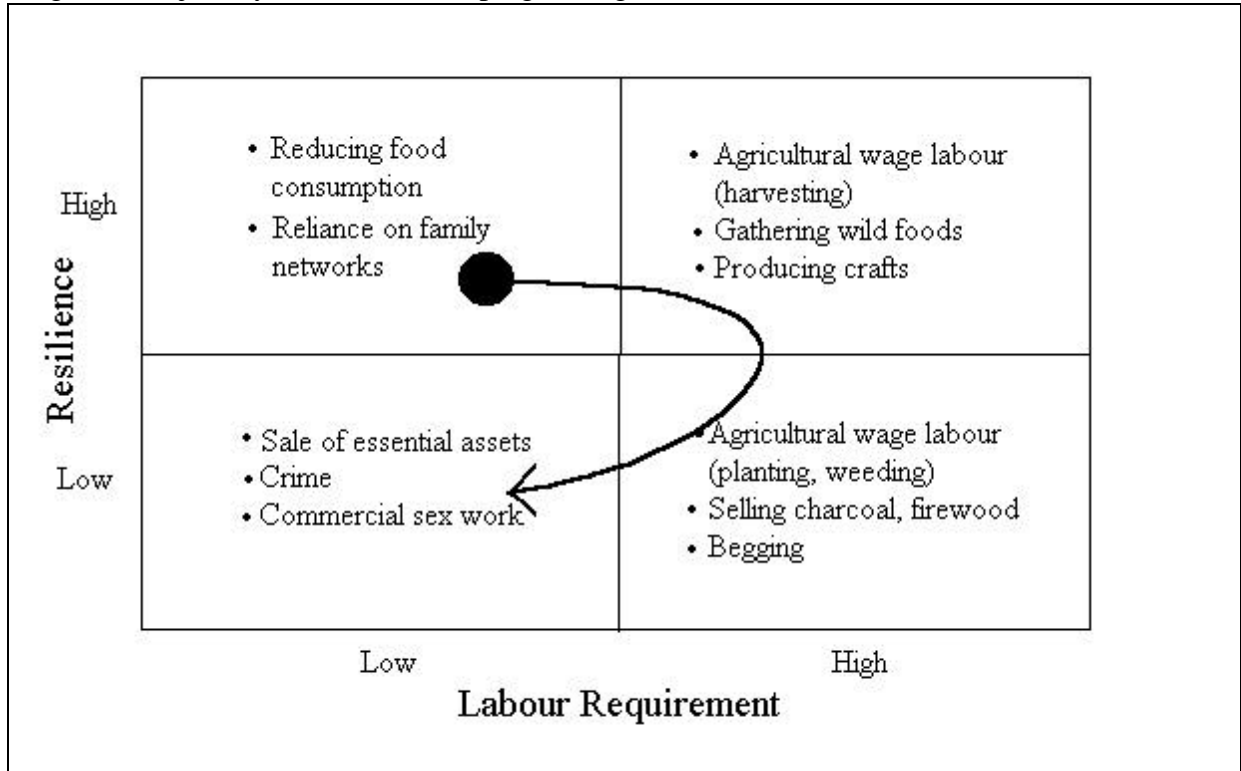
56. Based on existing models of coping strategies during famine (de Waal 1989; Davies 1995; Eldridge 2002), we can re-analyse the factors that determine the effectiveness of

livelihood coping strategies in the face of food shortage. This yields the following major determining factors:

- (a) Claims on kin and other social networks. The saturation of these networks with the burdens of caring for orphans and the sick has already been documented above. This means that these networks are less available during a time of food crisis. In particular, the option of rural households calling on urban kin for support is much reduced.
- (b) Household labour availability. This is reduced by the various impacts of HIV/AIDS. However, it should be noted that many coping strategies are less time-dependant than farming. For example wild foods are usually available over an extended period.
- (c) Structure of alternative income labour markets (including sex work). The increasing supply of desperate destitute individuals seeking work may combine with a decline in demand to render some of these markets unviable. There is evidence for a flood of down-market commercial sex workers into certain towns (SCF 2002).
- (d) Viability of adults reducing food consumption for the duration of the crisis. The vicious interactions between HIV/AIDS and malnutrition will be documented below.
- (e) Skill and experience in implementing livelihood coping strategies. Implementing a successful coping strategy requires skill and experience, that is typically handed down from mother to daughter. If this is absent, it may be impossible for a stricken family to survive.
- (f) Expectation of returning to a viable livelihood at the conclusion of the drought. This subjective factor is little studied but is vitally important. The rationale and motivation for undergoing the planned hardships inherent in an effective livelihood coping strategy make sense only in the framework of an expectation that an acceptable livelihood can be preserved, and 'normality' restored (as represented in figure 1). If there is no such expectation, and the expectation is of a continued downward trajectory (as in figure 2), then it is possible that demoralisation will set in and families will no longer even try to sustain a livelihood.

57. These assumptions are called into question by HIV/AIDS. The likely outcome is a faster trajectory to destitution, as represented in figure 3. Whereas in a 'traditional' food crisis, it might take a household two seasons or so to descend through the various stages of coping, in a 'new variant famine' this may happen much more quickly.

Figure 3: trajectory of livelihood coping strategies



58. Increased risks of HIV transmission are a result of the activities followed in the third and fourth quadrants. Social disruption, impoverishment and migration are all known risk factors for HIV transmission. Resort to commercial sex work is a major risk factor.

Morbidity and Mortality in New Variant Famine

59. It is very probable that NVF will increase morbidity and mortality in food crises in a number of ways. These include: (a) the vicious interaction between HIV and malnutrition in both children and adults; (b) increased probability and virulence of health crises; (c) negative feedbacks at the level of governance and root causes of food crises. Each will be discussed here.

The vicious interaction between HIV and malnutrition

60. Reducing consumption is the traditional first response of adults facing a food crisis. Most adults were well able to withstand prolonged undernutrition during a crisis without major long term effects. For this reason, humanitarian interventions have focused mostly on children. This is no longer the case.

61. Most types of nutritional deficiencies suppress the immune system, and thus make infections—including HIV—more virulent. HIV replicates more rapidly in malnourished individuals, hastening the progression from HIV to AIDS (ACC/SCN 1998, Semba and Tang 1999). People living with HIV and AIDS have both increased nutritional needs (to fight the infection) and lower absorption of nutrients. Protein needs are commonly estimated at 30-50% more and energy needs about 15% more. Irregular meals and the consumption of

substitute wild foods, which may be hard to digest and cause digestive problems, can only make matters worse.

62. Therefore, at an aggregate population level, widespread malnutrition threatens to accelerate the progression from HIV to AIDS for millions of infected individuals. Will this mean mass mortality of people living with HIV and AIDS during the famine period? Will it mean protracted higher death rates for some years to come? We simply do not know.

63. Malnutrition predisposes to susceptibility to HIV infection. Adults who are malnourished (and young women are of particular concern here) are more prone to HIV. The same holds for mother-to-child transmission of HIV. It is therefore likely that, independently of the socio-economic factors that will increase exposure to HIV, malnutrition itself will increase the rates of transmission.

How does HIV/AIDS affect health crises?

64. Much of the excess mortality during food crises is caused by outbreaks of infectious and waterborne diseases, especially in locations where displaced people congregate with inadequate sanitation and health care. NVF is likely to contribute to these health crises in the following ways:

- (a) Adult sickness and death increases the risks for children in the afflicted households, who are more likely to be malnourished and neglected, and to have poorer access to health care.
- (b) Migration and collapse of coping strategies will increase exposure to infectious disease.
- (c) Susceptibility to infectious disease, the severity of illness episodes, and the risk of mortality will increase because of immunosuppression.
- (d) Levels of vaccination and upkeep of public health facilities will decline because of capacity crises.

65. The overall outcome is likely to be greater morbidity and mortality than in 'traditional' famines. However, the increase in the technologies of preventing child deaths in the last decade, such as widespread immunisation against measles and other infectious diseases of childhood, is capable of mitigating this factor.

Responses to NVF

66. A necessary prelude to any examination of responses is (a) a study of capacity constraints and (b) the impact of HIV/AIDS on their viability. AIDS-impacted societies in SSA are caught in a pincer of escalating requirements and diminishing capacity. A process of ruthless prioritisation will be required to ensure that the basic functions of disaster prevention and mitigation are effectively followed.

67. Early warning systems will need substantial methodological revision to take account of new vulnerability factors. Current EWSs are based upon a model that assumes a geographical basis for vulnerability and a time-bound crisis, that returns to 'normal' after one or two years. The 'swiss cheese' model of AIDS-related vulnerability demands new monitoring tools, while the crisis trajectory (figure 2, above) indicates that 'early warning' of shocks is a relative concept.

68. Market-based relief responses may be significant but suffer from structural weaknesses. First, many of the AIDS-poor have no cash. Second, market infrastructures are weakened by HIV/AIDS. However, the inequality effect of the HIV/AIDS epidemic means that while the most afflicted households are rendered destitute, others are far less affected and may even prosper. Hence the demand for labour and services may prove resilient.

69. Labour-based relief programmes face the obvious difficulty that the AIDS poor are labour scarce. Those who have most free labour (young men) may be least socially engaged, that is they may not be involved in supporting dependants. There is a need to ensure the social engagement of those engaged in labour schemes, either by targeting them to particular categories (e.g. women) or by making remittance to families part of the wage. Options such as paying money to all girls of school age to enable them to remain in school and to avoid sex work should be considered.

70. Food relief will doubtless be an essential part of any emergency programmes. The roles of food aid in mitigating the impacts of HIV/AIDS at household level have been analysed (Webb and Paquette 2000). We are now entering a more serious crisis. Various issues arise:

- (a) Food aid should be considered both as a nutritional supplement and an income transfer.
- (b) There should be little expectation that food aid will be a transitory response before a resumption of 'development'. We are facing a long-term welfare bill.
- (c) Problems of targeting may be handled best by the communities themselves, based on their own criteria for neediness, to minimise the complexities of handling household level targeting in a regionwide emergency effort.

71. Child nutrition will remain an important component of all relief efforts. A focus on orphans and other vulnerable children will be essential.

72. Health interventions will, as in the past, need to include reducing exposure, reducing susceptibility, and improving care and treatment. Maintaining immunisation levels will be vital.

73. Child care, in the form of support to caregivers, may emerge as a critically important emergency intervention. Child care is not normally included among relief interventions because national and international agencies don't usually do it. But in fact it is one of the commonest, earliest and most effective responses, undertaken by communities and support networks themselves. In the era of AIDS with an escalating number of orphans it needs to be taken seriously. One radical option is to pay cash to women who are taking care of children, recognising child care as a vital activity deserving a wage. This would also serve to empower women, possibly the single most important measure to overcome HIV transmission.

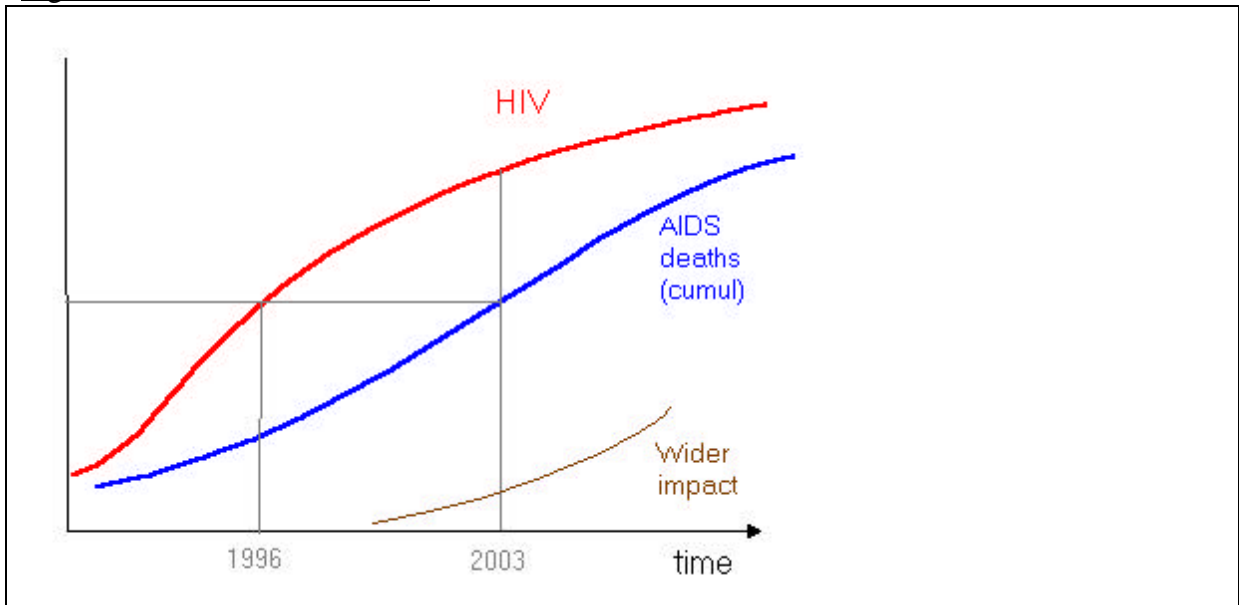
Long-term Implications

74. The emergency responses outlined will mitigate the immediate impact of NVF. However it would be unwise to advocate them as a major and effective response to the social cataclysm that is facing southern Africa today. One reason is that the model still requires thorough testing and validation. The second is that the situation is unfolding at such a velocity that

these responses may rapidly be superseded by an escalating multi-dimensional crisis, perhaps involving ‘AIDS-related national crises’.

75. Figure 4 is taken from Barnett and Whiteside (2002), which shows the way in which HIV prevalence rises well in advance of AIDS mortality. The levels of mortality we are seeing today reflect infections that occurred approximately seven years ago. By implication, today’s levels of HIV will translate into AIDS mortality only after a similar number of years. A third line has been added to the figure: ‘wider impact’, to suggest that the governance and livelihood impacts of the HIV/AIDS epidemic also need to be considered.

Figure 1: HIV and AIDS curves

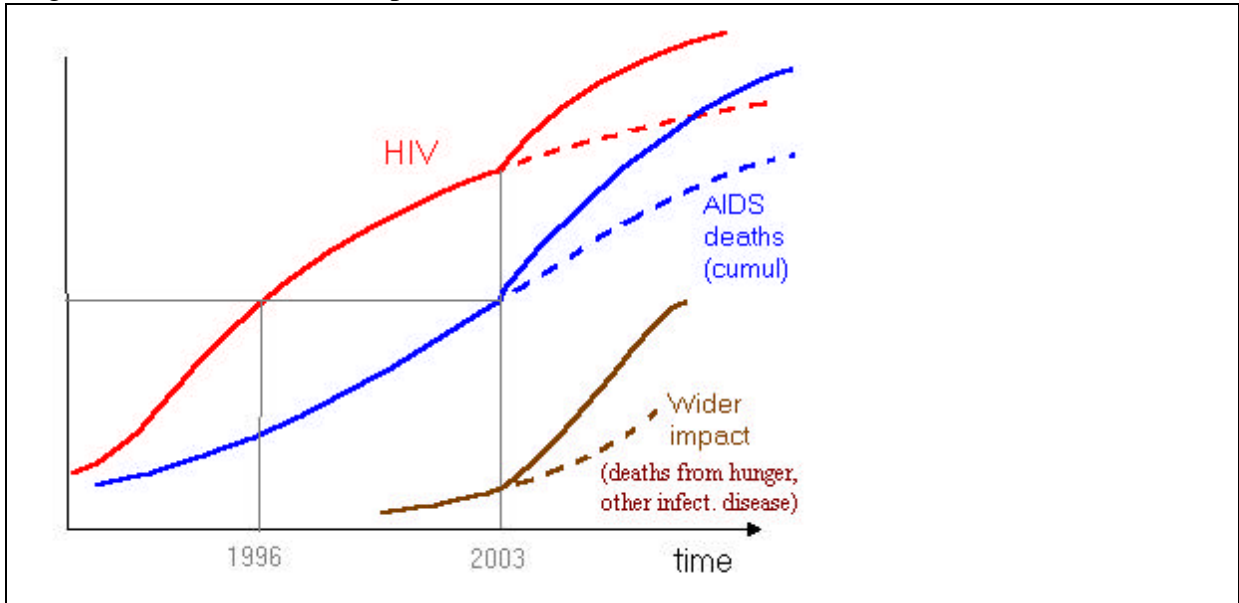


76. One of the more discouraging aspects of the current crisis in southern Africa is that, for many countries, it has occurred when we are only half way up the curve of cumulative AIDS deaths. If the current levels are sufficient to cause a crisis on today’s scale, what does this imply for the levels that are still some years in the future? What does it imply for more structurally vulnerable countries such as Ethiopia, which are in the early stages of their HIV/AIDS epidemics?

77. One of the implications of the NVF hypothesis is that we are now, for the first time, seeing the secondary impacts of the HIV/AIDS epidemic. Demographic history is replete with occasions in which one disaster predisposed to another (Dyson 2002). The HIV/AIDS epidemic is no exception: it renders affected societies more vulnerable to further demographic crises including famine and epidemics of other infectious diseases (de Waal 2003).

78. Another unfortunate implication of the crisis is that the NVF itself will exacerbate both HIV transmission and AIDS morbidity and mortality, while simultaneously impeding effective HIV/AIDS programming. This may mean that we need to revise figure 4 to include a feedback loop from ‘wider impact’ to HIV and AIDS: a ‘tipping point’ has been reached at which these accelerate. We can also re-designate the ‘wider impact’ curve to represent excess deaths caused by factors unlocked by the HIV/AIDS epidemic such as hunger and infectious disease. This is represented in figure 5.

Figure 5: HIV, AIDS and Impact Curves



79. Moreover, to add to the pessimism, this model only includes one ‘secondary impact’, namely famine. What if we include other secondary impacts such as conflict, the collapse of institutions (including health services), accelerated brain drain, economic crisis or indeed ‘AIDS-related national crisis’? Any one of these has the potential to further feedback into the three curves, sending them higher still. In this context we should note that (a) almost all predictions for the demographic impact of HIV/AIDS have, thus far, been over-optimistic, and (b) the various ‘ceilings’ for HIV prevalence that have been posited, have all been broken in the worst-hit countries such as Botswana and Swaziland. On the other hand, Tanzania and Uganda appear to have stabilised at lower prevalence levels, while also avoiding the worst effects of the impact wave such as NVF.

80. This analysis has important implications for demographic modelling of the HIV/AIDS epidemic. Thus far, demographic projections have not factored in secondary demographic shocks such as famine and massively increased mortality from other causes. This analysis implies that we have much less certainty about what is the long-term demographic outcome of the pandemic, and indeed whether we can sensibly talk about any form of stabilisation or equilibrium at all.

Conclusion

81. The NVF hypothesis remains, at present, unproven. Its longer-term implications as spelled out in the foregoing paragraphs are conjectural. However, the NVF hypothesis is consistent with a growing body of evidence concerning the impact of HIV/AIDS on agrarian livelihoods (the middle part of this paper) and informed observations of the current crisis in southern Africa. We would be unwise to discount it because its implications are so extreme.

82. Time is not on our side. There is too little experience in taking livelihood protection programmes and policies to scale. There is too little data and analysis of what HIV/AIDS means in a food crisis. The scenarios sketched out must be taken seriously.