Chapter 1

AIDS, Poverty, and Hunger: An Overview

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The AIDS epidemic is a global crisis with impacts that will be felt for decades to come. More than 28 million people have died since the first case was reported in 1981. In 2005, AIDS killed 2.8 million people, and an estimated 4.1 million became infected, bringing to 38.6 million the number of people living with the virus around the world; 24.5 million of these people live in Sub-Saharan Africa (where in some countries one in three adults are infected) and 8.3 million live in Asia (UNAIDS 2006).

AIDS epidemics are multidimensional, long-term, and phased phenomena. First comes the wave of HIV infection itself, followed by a wave of opportunistic infections, the most common one being tuberculosis. This is followed several years later by AIDS illness and death. And finally, depending on the prevalence of the disease and availability of treatment, there is an accumulation of macroeconomic and social impacts at household, community, and national levels. A few countries have brought down infection rates. However, no country has yet seen a downturn in AIDS mortality, and the fourth phase is only just beginning for the majority of affected countries. These multidimensional, long-wave characteristics, linked to the fact that AIDS disproportionately strikes the most productive members of society, are what sets HIV and AIDS apart from many other health shocks.

We do not know how severe the impacts of the third and fourth phases will be because little about this epidemic is linear over time, and little is generalizable across contexts. But we do know that, for many countries, impacts will continue to be felt for years to come. Because of the vast numbers of people currently infected

with the virus and the slow rollout of antiretroviral therapy (currently only 1 in 10 Africans who need the drugs actually have access to them), this would still be the case even if HIV transmission magically ceased overnight.

Attempts to attenuate these various waves are conventionally grounded in the three core pillars of AIDS policy: prevention, treatment and care, and mitigation. As direct interventions are scaled out patchily and slowly, there is an urgent need for a deeper understanding of the integral role that food and nutrition can and should play. And there is a corresponding urgency to use this understanding to improve responses at all levels.

Against this backdrop, the International Food Policy Research Institute (IFPRI) decided to bring researchers and practitioners together to review the existing evidence and its implications for future food- and nutrition-relevant policy and to highlight remaining knowledge gaps. In so doing, it also aimed to forge links between countries, sectors, and perspectives in both research and action.

Conference and Book

The "International Conference on HIV/AIDS and Food and Nutrition Security: From Evidence to Action" was held April 14–16, 2005, in Durban, South Africa, following broad consultation with a range of partners within national governments, the Consultative Group for International Agricultural Research (CGIAR), the United Nations, civil society, academia, along with bilateral and international donors. Around 200 international researchers and practitioners participated over three days, during which over 50 papers were presented in a series of parallel and plenary sessions. Most papers were selected by an external review panel on the basis of a competitive call for abstracts in October 2004 that yielded nearly 300 abstracts. The ensuing papers were revised and resubmitted following the Durban discussions, rigorously peer reviewed, with the final selection being brought together in this book in early 2006.

The IFPRI conference was deliberately planned to follow directly from the WHO Consultation on Nutrition and HIV/AIDS in Africa (April 10–13). Extensive discussions were held between organizers of the two conferences to maximize their complementarity, with the hope that this would help bring researchers and practitioners working on clinical nutrition in the context of HIV and AIDS together with others focusing at the broader level of household- and community-level food and nutrition security in the context of people's livelihoods. In this way the food and nutrition causes and consequences of HIV epidemics, and their policy and program implications, were systematically and comprehensively addressed over the full week.

The conference adopted a thematic approach, with structure, format, and conference participation being driven by the key issues and questions to be addressed, namely:

- *Interactions.* What is known about the interactions between agriculture and other rural livelihood systems, the spread of HIV, and the impacts of AIDS at different levels?

- *Local responses.* What is known about the capacities and strategies of households and communities to reduce infection risk (resistance) and to respond effectively to the impacts of HIV/AIDS (resilience)? What do these strategies imply for the types of support needed from governments, civil society, the private sector, and international agencies?

- *Policies, programs, interventions.* What is known about the processes and impacts of food- and nutrition-relevant policies, programs, or interventions that have sought to prevent the spread of HIV and/or mitigate the impacts of HIV/AIDS?

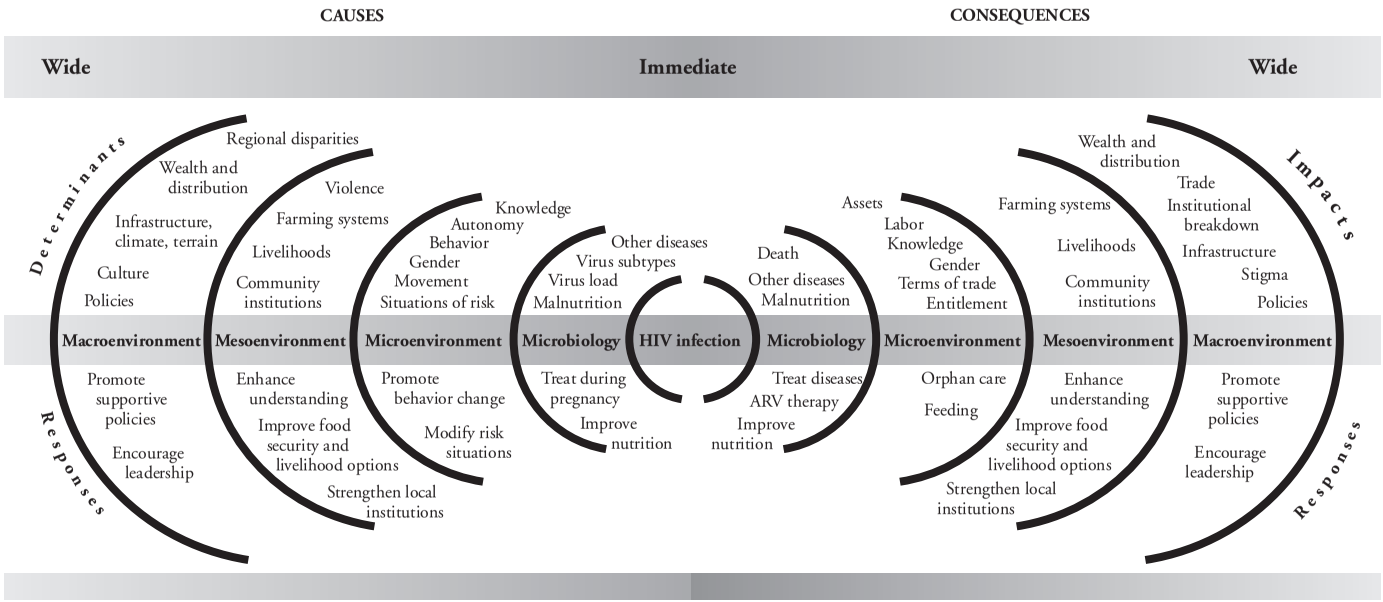
In short: what is happening, how are people responding, and how can external support be best applied?

This book applies a similar structure using some of the key chapters under each of these themes to highlight what is known and not known about interactions, local responses, interventions, and policy responses, identifying along the way the key challenges for research and action. Theme 2 on local responses is the critical interface between the dynamic impacts of HIV and AIDS at household and community level (Theme 1), and the necessary responses on the part of governments and other development actors (Theme 3). Many impacts are revealed through the responses that households make, with the response itself often classified as an impact. The treatments of Themes 1 and 2 thus tend to merge in many studies, and this has been reflected here in the division between two main sections of this book—first, understanding interactions (primarily Themes 1 and 2), and second, responding to interactions (primarily Theme 3).

Concepts

In order to begin to answer these questions, to know what to look for and where, the conference took as its starting point the conceptual framework in Figure 1.1. The framework depicts the universe of factors and processes conditioning the

Figure 1.1 The universe of HIV/AIDS determinants, impacts, and responses



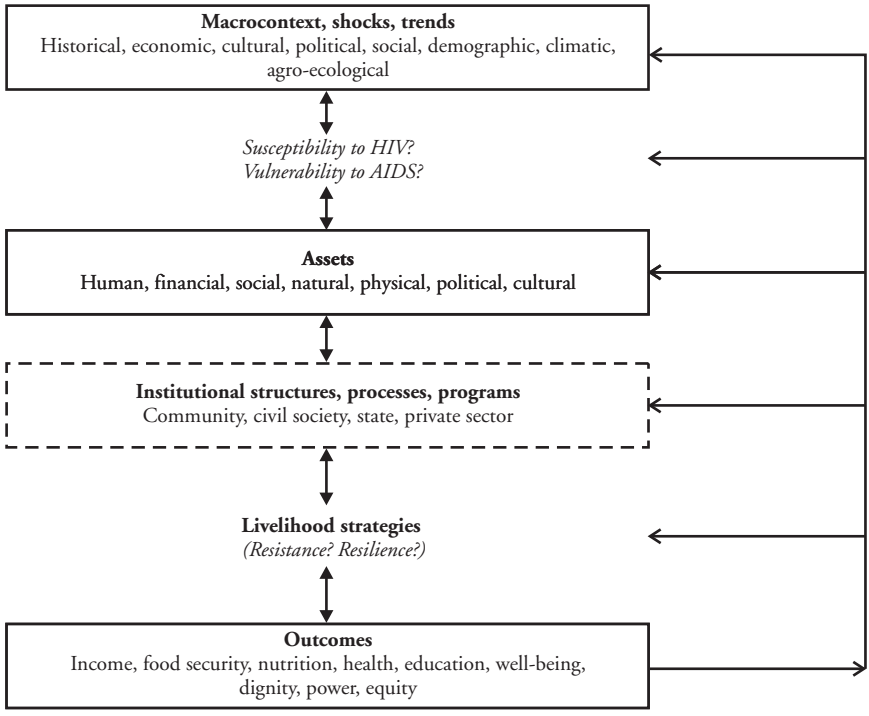
Source: Loevinsohn and Gillespie (2003).

causes and consequences of AIDS epidemics. With time broadly flowing left to right, it shows the waves of determinants of HIV infection, from macro to micro levels, and the subsequent waves of impacts, from micro to macro (Loevinsohn and Gillespie 2003).[1]

In the top left quadrant, we can see the various levels and sources of susceptibility, that is, risk of exposure to HIV and risk of infection by the virus. Infection is at the epicenter of Figure 1.1 and is followed, in the top right quadrant, by the various sources and levels of vulnerability to AIDS-related impacts. In the bottom half of the diagram, we can see various responses: those that are broadly preventive (or aimed at strengthening resistance) in the bottom left, and those aimed at mitigating impacts (or strengthening resilience) in the bottom right.

It is also useful, as many authors did, to sharpen the focus on household, community, and institutional interactions. This can be done by folding these concepts into an adaptation of the livelihoods framework (Carney 1998; Gillespie, Haddad, and Jackson 2001) that is complementary to the universe map (see Figure 1.2). Such

Figure 1.2 Adapting the livelihoods framework to HIV and AIDS



a framework is a useful organizational tool, a synthetic framework that shows how HIV and AIDS affect, and are affected by, people's livelihoods in an iterative cycle. It captures the diversity of interactions at different scales while providing a simple, common frame of reference to enable researchers and practitioners (often from quite different disciplines) to communicate effectively.

Starting from the top of Figure 1.2, the macro context and its conditions, shocks, and trends will to a certain extent determine both the susceptibility and vulnerability of different livelihood systems to HIV and AIDS. (Such a context will, of course, determine other vulnerabilities, some of which may overlap and interact with HIV/AIDS.) The risks that people face of contracting HIV will be partly governed by the susceptibility of the livelihood system on which they depend (e.g., agriculture), and the downstream effects of HIV and AIDS on assets and institutions will be conditioned by the vulnerability of the system. After HIV has entered a household or community, the type and severity of its impacts on assets, mediated by various institutional structures, processes, and programs, will determine the type of strategies that the household adopts. These strategies will differ, among other ways, in terms of the resistance to HIV or resilience to AIDS that they confer on the household. Such strategies and responses in turn lead to various outcomes, nutrition and food security among them, and these outcomes will themselves condition future susceptibility and vulnerability (the upward feedback loop).

This is the pathway that HIV takes through households and communities. But it is important, as will be repeatedly emphasized, that we do not lose sight of the many factors driving vulnerability, including such macro-level conditions and trends as climate change, debt, international trade policy, and governance.

Context

Overall, AIDS epidemics are most severe in the region of the world where food insecurity is most severe, Sub-Saharan Africa, although there are significant differences between countries. The majority of participants were from Africa, though the conference was designed to be international in order to ensure opportunities for cross-regional learning. Examples of such learning from the past include the Junior Farmer Field and Life Schools, an approach pioneered in Cambodia and now being scaled out across eastern and southern Africa.

In Asia, India is fertile terrain both for the spread of the virus and for its impacts on poverty and hunger, given the existence of many known predisposing factors (gender and socioeconomic inequality, caste, class, religious divisions, high population mobility, urban–rural linkages, food insecurity, and malnutrition). It should also be remembered that in just 10 years from 1990 to 2000, the HIV preva-

Table 1.1 Prevalence and numbers of people infected with HIV in selected countries (end 2003)

Country	Estimated total numbers of adults and children	Estimated prevalence among adults 15–49 years (%)
India	5,700,000	0.9
Malawi	940,000	14.1
Mozambique	1,800,000	16.1
Rwanda	190,000	3.1
South Africa	5,500,000	18.8
Zambia	1,100,000	17.0
Zimbabwe	1,700,000	20.1

Source: UNAIDS (2006).

lence in South Africa rocketed to 25 percent from 1 percent (the present prevalence in India). Using the case of India, one chapter in this book looks at how biostructural livelihood interventions may reduce risk of people's exposure to HIV.

The latest available national-level HIV data for the countries highlighted in this book are provided in Table 1.1. Most chapters focus on single countries, but others are more regional and/or synthetic in nature. Though the conference was not geographically restricted in any way, it was inevitable that most paper submissions, and ultimately most studies featured in this book, originated from the region where most research and programmatic experience are under way: southern Africa. There are thus geographic as well as thematic gaps in the evidence base. Not enough is known about the situation in western Africa, for example. Though the spread and the impacts of HIV and AIDS are less pronounced in this region, there are some hot spots (e.g., Cote d'Ivoire, parts of Nigeria) where more research is needed.

Nothing is static in the pandemic. In representing the proportions of a given population living with HIV, the prevalence data in Figure 1.1 are delayed snapshots of incidence. Prevalence could decline because of high mortality rates and/or reduced incidence of new cases of infection. Barnett and Topouzis (2003) delineate three principal stages that a community may pass through: *AIDS-initiating,* with very low HIV prevalence rates and no AIDS impacts; *AIDS-impending,* where HIV prevalence rates are rising but the majority of infected people are still in the asymptomatic phase before becoming ill; and *AIDS-impacted,* when households and communities feel the impact of AIDS as infected people succumb to AIDS-related illnesses and eventual death. Clearly, response strategy needs to be tailored to stage of epidemic, with preventive approaches, aimed at strengthening resistance, taking precedence in the early stages (e.g., India, Ethiopia), whereas impact mitigation or

the strengthening of household and community resilience needs to be at the fore in the latter stages of epidemics (e.g., Uganda, which long ago reached its peak HIV prevalence, is now in the midst of the death wave). Another limitation of such national data is they mask often huge subnational variations, as some of the following chapters will demonstrate.

Content

The conference was subtitled "From Evidence to Action" for two reasons. The first was to signal its scope, with several detailed academic studies of interactions being balanced with descriptions of approaches and interventions aimed at responding to these interactions. The second was to signal that we are now, in a sense, at a watershed. The evidence base, though still incomplete and in some places a little murky, has grown enormously in the past 5 years. In the time between the conference in mid-2005 and this book being published, numerous new studies have emerged, and more are in the pipeline. Because of this, and because of the context specificity of interactions and necessary responses, it is not the intention here to generate definitive policy conclusions. Rather, this overview attempts to build on earlier work (for example, that summarized in Gillespie and Kadiyala 2005) to map the evolving breadth and depth of this field, capture new knowledge, and generate ideas to be built on and operationalized in future work. In this way the dual agenda of research and action may be better advanced. Key emerging research priorities are highlighted in boxes as they apply to various parts of this overview.

The first nine chapters that follow this overview are mainly concerned with examining impacts and interactions (as described in the section on "Understanding Interactions" below), and subsequent chapters focus primarily on policy and program responses to these interactions. The book concludes with the big challenges for the future, as set down by Tony Barnett in his riveting keynote address. Several chapters, however, derive from work that examines both impacts and responses.

The chapter ordering is thus based on the original thematic structure: from interactions to responses, from evidence to action. Chapters range from studies focusing on risks of HIV infection (Chapoto and Jayne), on the impacts of HIV and AIDS on rural livelihoods, including agriculture (Dorward and Mwale, Donovan and Bailey, Masanjala, Jayne et al.), to chapters seeking to unravel interactions between HIV, AIDS, and nutritional status (Stillwaggon). Most chapters rely primarily on quantitative data, but some are largely informed by qualitative data (e.g., Bryceson and Fonseca, Bond, Bishop-Sambrook et al., Senefeld and Polsky). Of the latter, Binswanger, Gillespie, and Kadiyala and Gavian, Galaty, and Kombe present broad-brush analyses of the policy and programming environment, highlighting

the various limitations of the status quo, and Drimie and Mullins offer an NGO perspective and approach to mainstreaming. Two chapters focus on innovations in response: Loevinsohn's on biostructural interventions, and Djeddah, Mavanga, and Hendrickx on Junior Farmer Field and Life Schools, while Egge and Strasser consider approaches to monitoring the impact of food aid on HIV-affected groups.

Contributions also reflect the diversity of disciplinary involvement in this field and the varied methodological approaches being applied to it. Many professional backgrounds are represented, including agricultural economics, epidemiology, sociology, anthropology, public health, nutrition, program management, and policy, and in some cases, studies themselves are interdisciplinary. Not surprisingly, given such professional diversity, a variety of methods are employed. Econometric analyses of longitudinal quantitative panel data are balanced by qualitative techniques that aim to elicit the interpretation and understanding of those who are directly and indirectly affected. Although neither econometric models nor local people's responses are themselves fully satisfactory for establishing causality, the triangulation and cross-checking of these methods can greatly increase the trustworthiness of interpretations. Differences in approach, "language," and method can bring challenges (some of which are discussed later), but they can also foster insights and innovations that help unravel the pathways of HIV through people's livelihoods and through their lives and deaths.

Understanding Interactions

Poverty, Food, and Nutrition Security and the Risk of Being Infected with HIV

Looking at the top left quadrant of Figure 1.1, in investigating the risk of an individual being infected with HIV, we[2] need to ask *what* social, economic, political, cultural factors and processes are responsible for the spread of HIV (and specifically how are food and nutrition implicated, if at all), *who* is most susceptible, and *why* are they susceptible. A few important papers shed light on these questions (though this aspect remains relatively underresearched; see Box 1.1).

Who Is at Risk, and Why?

In line with earlier evidence of the disproportionate risks faced by women, especially younger women, more than 60 percent of the prime-age deaths observed in a nationally representative rural Zambian sample between 2001 and 2004 were women (Chapoto and Jayne, this volume). The marginal probability of dying from disease and AIDS-related causes rises steeply from age 15, peaking between ages 30 and 34 for women and 50 and 54 for males. Young, single women were at most risk.

Box 1.1 Research Priority: HIV Spread and Food Insecurity

What is the role of poverty and food insecurity in driving risky behaviors? How prevalent is transactional sex, and how linked is it to food poverty? Is food insecurity a major determinant of migration, and are migrants at heightened risk of being exposed to HIV? Can efforts aimed at enhancing food security and livelihood options of susceptible groups make a cost-effective and timely contribution to preventing the spread of HIV? Can options be identified that are economically and environmentally sustainable, that make use of local opportunities?

Addressing the question of whether poverty puts people at greater risk of being exposed to the virus, Chapoto and Jayne (this volume) find, in line with with findings in the early stages of the epidemic, that men in the upper half of the assets distribution are more likely to die of disease-related causes than poorer men. In contrast, poor women are equally likely to die as better-off women. Digging deeper, they find that within the group of relatively poor women, those having some form of formal or informal business income are 15 percent less likely to die of disease-related causes than those without any such income, suggesting that efforts to provide greater income-earning opportunities for poor women may make at least a modest contribution to reducing female prime-age mortality.

The link between poverty and HIV risk may be mediated through the need to move in search of work. In Malawi, the search for work and food is conflated in the term *kusokola,* or "looking for food" (Bryceson and Fonseca, this volume). Mobility here is not inherently risky, but it is a marker of increased risk. In Zambia, low-income men living away from home 1 month or more per year are more than twice as likely to die as men living at home (Chapoto and Jayne, this volume). Among richer women, who are also more mobile, it is possible that the protection conferred by their greater financial independence may to some extent be negated by the heightening of mobility-induced risk. In Ethiopia, though there are significantly lower levels of HIV infection in rural communities than in urban areas, the disease is concentrated in higher-risk "bridging populations" that have substantial links with other, more risk-averse subpopulations (Bishop-Sambrook et al., this volume).

At the macro level there is no obvious relationship between national wealth and HIV prevalence. Southern Africa is richer than other regions in Sub-Saharan

Africa but has countries with particularly high prevalences, such as Botswana and South Africa. Physical dislocation of families, driven by the need to find work, coupled with the ability to move around via relatively good transport routes, probably plays a large part in this. Men tend to live away from home for long periods, increasing the chances of both partners engaging in commercial sex. Strong urban–rural economic linkages in southern Africa may thus translate into both higher incomes and higher infection rates.

The links between livelihoods and risk suggest that HIV is an "occupational hazard" for particular economic categories of people (Bryceson and Fonseca, this volume). But again, preconceptions may be challenged: for example, Campbell's (2003) South African study found commercial sex workers to be less vulnerable to HIV infection than miners or youth because of their insistence on condom use.

In Malawi, poverty and HIV risk do seem to be increasingly linked against a backdrop of major livelihood shifts. Bryceson and Fonseca (this volume) highlight the ongoing collapse of the peasant household's coherence as a unit of production as livelihood portfolios have veered: (1) from self-sufficient unpaid labor performed within the household (especially by women and children) toward cash-earning piecemeal work (or *ganyu*); (2) from agriculture toward nonagriculture, with income-earning turning increasingly to trade and services, including sexual services; and (3) from household toward individualized work, whereby every able-bodied person works, including women and youth, to earn cash to cover their subsistence needs. Women and girls are now undertaking *ganyu* labor beyond the confines of the village, with poor women at particular risk as transactional sex is increasingly incorporated into *ganyu* contracts (Bryceson and Fonseca, this volume).

A religious leader in a patrilineal village in Khongoni captured this well: "HIV/AIDS is not very threatening compared to the hunger which most households face. In fact it is hunger, which is contributing to the rise in HIV infections in the area" (Bryceson and Fonseca, this volume).

Another major source of risk, and one that sets HIV apart from most other diseases, is the prior death of at least one adult in the same household. In Zambia, this was found to be the single most important factor influencing the probability that a prime-aged individual would die (Chapoto and Jayne, this volume). Irrespective of gender and income status, individuals experiencing a prior death in their household are six to seven times more likely to die of disease-related causes than individuals in households with no prime-age deaths in the past 8 years.

Malnutrition and Ill Health as Risk Factors

Nutrition is the pivotal interface between food security and health security. An individual's susceptibility to any disease depends on the strength of the immune

system, which among other factors is affected by nutrition, stress, and the presence of other infections and parasites. The risk of infection with HIV is heightened by high prevalences of such cofactor conditions, which decrease immune response in HIV-negative persons and increase viral load in HIV-infected persons (Stillwaggon, this volume). Worms cause malnutrition through malabsorption and intestinal bleeding, and they weaken the immune response by forcing its chronic reaction to the nonself invaders. Infectious and parasitic diseases and malnutrition thus create an environment of enhanced risk.

Occupational hazards extend to domestic environments. Stillwaggon (this volume) paints a picture of risk in Africa as a child gathering water for the family in a slow moving stream, or helping with the family laundry at the riverside. Any resulting schistosome colonization of the genitourinary tract may render him or her, as an adult, at much higher risk of sexual transmission of HIV than a healthy person with similar sexual behavior.

HIV/AIDS Impacts on Food and Nutrition Security

We now move from a focus on the risk of being infected to the downstream or postinfection impacts (i.e., the top right quadrant of Fig. 1.1). How did the conference enhance our understanding of these impacts and the ways in which households and communities are responding?

The literature on the impacts of HIV and AIDS has grown very rapidly in recent years (with numerous studies recently reviewed in Gillespie and Kadiyala 2005). Impacts are multiple, often interrelated, and often highly determined by context. In Rwanda, Donovan and Bailey (this volume) find death-affected households to show few significant differences in crop production from matched nonaffected households without a death or illness. All crops show lower production amounts for households with a death, but with variability between households, significant differences were found only for beans, beer bananas, and fruit bananas. The difference in bean production (18 percent lower in death-affected households), however, might be important because beans are a key food security crop for Rwandan households. Also, beer bananas are traditionally a major source of income for women, so this difference implies a relative decline in women's income-earning potential in affected households.

Donovan and Bailey also highlight an important point that many earlier studies failed to take into account. Relatively small "death effects" may be a reflection that predeath measurements occurred during the illness period, when the household was already adjusting to AIDS. The measured "death effect" in such cases would thus be an underestimate of the extent to which the household was initially affected and had to change. Measuring the effects of adult illness and death separately provides

insight into the possible need for interventions before death to mitigate the most severe effects (e.g., irreversible asset disposal), which may cause permanent livelihood declines. In a study in Zimbabwe, Senefeld and Polsky (this volume) found that households with chronically ill adults were more likely to have their children drop out of school and more likely to resort to migration strategies to "cope."

Because many impacts are revealed in actual responses that households and communities make in the face of HIV/AIDS, we need to examine these responses for their effectiveness and sustainability. Where households are not subject to additional stresses such as drought, and when they are viewed over a relatively short reference period (e.g., a couple of years), there are some indications from the literature that traditional responses can mitigate the worst effects of AIDS. However, complex factors determine the success of these strategies. These include the sex, age, and position in the household of the ill/deceased person, the household's socioeconomic status, the type and degree of labor demand in the production system, the availability of labor support to affected households, other livelihood opportunities, available natural resources, the availability of formal and informal sources of support including credit and interhousehold transfers, the length of time that the epidemic has been impacting the rural economy, and the existence of concurrent shocks such as drought or commodity price collapses (Gillespie and Kadiyala 2005).

This all shows the complexity and the context-specificity of impacts. But what happens when the household is subjected to multiple stresses over the longer term, including those relating to macro, meso, and micro processes depicted in Figures 1.1. and 1.2? And what happens to communities when the proportion of such struggling households increases significantly? Though HIV/AIDS is different in several important ways from other shocks and stresses, where it is most prevalent in Sub-Saharan Africa, it is one among many concurrent stresses. We need to learn more about how increasing numbers of households and communities are struggling to respond to multiple overlapping vulnerabilities and interacting processes of change (see Box 1.2).

One distinct aspect of AIDS as a stress is its long-acting, slow-burning nature. AIDS can exert its effects over a relatively long period of time while rendering other stresses/shocks both more likely and more severe in their effects. Following a shock to household income, households in Malawi affected by HIV/AIDS were found to take up to 18 months to stabilize, with a new equilibium income that was about half the preshock income levels (Masanjala, this volume). Similar findings had been reported earlier in Kenya (Yamano and Jayne 2004). Such limited resilience is likely to increase vulnerability to other shocks.

Households are often perceived as "coping," but it is often not clear that households themselves would classify their responses in this way, nor that such "coping"

Box 1.2 Research Priority: HIV/AIDS, Multiple Stresses, and Overlapping Vulnerabilities

How does HIV/AIDS, as a source of vulnerability to food and nutrition insecurity, intersect and interact with other sources of vulnerability? How should one go beyond identifying who is "vulnerable" to better understand why households are, or why they become, vulnerable? Conversely, why are certain households more resilient than others in similar situations? What are the implications of this for vulnerability-monitoring systems? How should one develop approaches to identify options for households to reduce their vulnerability? What are the implications of overlapping vulnerabilities for approaches to addressing HIV/AIDS and food and nutrition insecurity?

is sustainable. "Coping" may be an illusion, a dangerous misnomer, according to several prominent commentators: "Coping is a way of escaping from the challenge of confronting how people's capabilities are stunted, how their entitlements are blocked, and how their abilities to function as full human beings with choices and self-definitions are frustrated" (Barnett and Whiteside 2002). More recently, Marais (2005) refers to the "coping fetish that exalts the presumed pluck and grit of the poor. . . . the discourse of 'coping' is an acceptance, an endorsement even, of the way things are, a patronizing gloss on a reality of privation and marginality." The fact is that "coping" is an externally applied value judgment that may or may not correspond to what is actually happening. Many responses are those of distressed households without much conscious strategy, "struggling not coping," as Rugalema (2000) pointed out. Responses may have a veneer of coping, but the costs may need to be paid further down the line (e.g., a child denied schooling).

Broader Impacts on the Agricultural Sector

The prevailing narrative of major declines in agricultural output for the region as a direct result of the impacts of HIV and AIDS has gained much momentum. Though many studies do show that significant negative impacts are being experienced at the individual and household levels as a direct result of AIDS-related labor losses (morbidity and mortality), there is as yet no conclusive support for the net decreases in agricultural output that might be expected as the impacts of HIV and AIDS increase (Larson et al. 2005). Second, it is not clear whether the major constraints being faced by agriculture-dependent households in the contexts of AIDS relate to labor, cash, or a combination of other resource deficits.

Using demographic projections and household survey evidence, Jayne et al. (this volume) consider the likely consequences of the AIDS pandemic for the agricultural sector of the hardest-hit countries of Eastern and Southern Africa. They suggest that although AIDS is projected to erode population growth to roughly zero in the seven hardest-hit countries, the net result is a roughly stable number of working-age adults over time. AIDS-related agricultural labor shortages are likely to induce labor migration out of the urban informal sector into agriculture. For poorer smallholder households, they argue that land will remain a primary constraint on income growth. AIDS-induced decapitalization of highly afflicted rural communities, meaning a loss of savings, cattle assets, draft equipment, and other assets, may come to pose the greatest limits on rural productivity and livelihoods for these communities.

In Malawi, Dorward and Mwale (this volume) highlight the challenges in determining the nature and magnitude of broader impacts of HIV/AIDS on labor markets and wages. Although affected households may face increased labor shortages, widespread reductions in household incomes and increased cash constraints will also depress labor and nontradable demand in rural communities with high HIV incidence. Reductions in family labor may also lead to a shift out of more labor-demanding cash crops. Depressed labor demand could cause wages to fall, posing serious problems even for poor households not directly affected by HIV/AIDS. They find some evidence for such a shift, driven primarily by reductions in labor hiring by better-off households with HIV-induced cash constraints. The introduction of labor-saving technologies in such a context could be damaging, as discussed later. Cash transfers to help bolster labor hire may be more appropriate here.

Moreover, where HIV/AIDS does depress unskilled wages, this is likely to increase inequality within rural communities and impose further pressures on poor people and their livelihoods. Jayne et al. (this volume) also point to the inequality-driving aspect of capital asset loss. Unlike the loss of labor and knowledge, which represent a loss to entire communities, capital assets lost by afflicted households are generally redistributed within the rural economy rather than lost entirely.

Macroeconomic Impacts, Poverty, and Inequality

At a macro level, the impacts of HIV and AIDS are not clear, at least not within current models and/or not yet. Several researchers have criticized the use of per capita GDP growth rate as a metric of AIDS impacts, along with the assumptions underlying common macroeconomic models (e.g., McPherson 2002). Earlier models tended to assume an early peak in the epidemic, and they omitted households that dissolved because of AIDS. Many important aspects of development

are econometrically invisible, including women's work, the loss of information in social systems including intergenerational knowledge fracture, the loss of social capital as networks and information channels erode, relational goods, misery/happiness, and others. What, for example, is the long-term cost to communities and nations of millions of psychologically damaged, poorly socialized children growing up as orphans? Put another way, looking at Figure 1.1, the indicators conventionally used at the macro level often fail to pick up the aggregated effects of changes at the meso- and micro-level environmental levels.

Because of the long incubation period between HIV and AIDS, no country has yet reached the peak of AIDS impacts. A full timeline of impacts is thus not even available to use as a basis for projections in other countries (notwithstanding the possible problems in extrapolating from one country to another). Possible social unraveling as the AIDS impact waves hit suggests that the development of macroeconomic effects may be nonlinear, and may be some way off.

Because our concern is primarily with deprivation, manifested by food insecurity and malnutrition, we should not be overly focused on aggregates or means that effectively mask subnational differentials. There is strong evidence, first, that inequalities (socioeconomic, gender) drive the spread of HIV infection, and, second, that AIDS itself increases these inequalities, a potentially vicious cycle that is not captured by measuring income means.

Two drivers of inequality have been discussed above: declining unskilled wage rates and decapitalization of affected households. Land acquisition by better-off households is likely to increase as widows and orphans fail to keep access and/or ownership rights to land after the death of the husband/father. The fear of such a loss may also foreclose the option of renting out land as a response, another example of the enmeshing of vulnerabilities and inequities (in this case, relating to gender and HIV). The AIDS epidemic is thus intertwined with the way in which power, authority, value, and opportunity are distributed within societies. Such land acquisition trends could even lead to aggregate production increases at the "community" level while simultaneously increasing inequality, poverty, and malnutrition.

The majority of impact studies are at the household level. As well as suffering from an inability to track the dynamics of interactions over time (see "Research Gaps and Challenges" below), household-level effects do not relate well to more aggregated sector-level or national-level impacts. Nor do they shine a clear light on what is happening within households, such as intrahousehold division of labor, caregiving, and other resources, especially impacts on women and children. Yet another problem with the notion of "household coping" is its implication of intrahousehold homogeneity of those affected. A conference participant highlighted this well in pointing out how the "extended family" in most cases meant "extended women."

AIDS, Poverty, and Stigma

Stigma itself is an impact of HIV/AIDS that may adversely affect the ability of individuals or households to respond: both a consequence of HIV and AIDS as well as a cause of future vulnerability. Depending on the social environment, disclosure of HIV status may lead to stigma, or it may open up other response options. Where there is openness, disclosure may be a gateway to community support (Norman and Chopra 2005).

Stigma and poverty are mutually reinforcing (Bond, this volume). Stigma may not be primarily associated with promiscuity and reckless behavior, but it may be increasingly linked to the sense of being overwhelmed by the work, expense, and emotional strain of having to care for sick people in the context of declining household resources. Bond (this volume) quotes a 15-year-old boy who describes how in a "biting economy," people living with HIV and AIDS are considered a "burden" because they are not able to contribute to household income when they are sick, and they soak up money, energy, and time. Both they and relatives who come to visit them take up space. The fact that illness takes a long time drags households down.

The AIDS impact literature has spawned a variety of labels including "afflicted households" (containing an individual infected with HIV), "affected households" (possibly caring for an orphaned child), along with the label PLWHA ("persons living with HIV and AIDS"). But given the diversity of risk factors and processes, and the fact that HIV/AIDS is one among many interacting sources of vulnerability, these terms are increasingly questioned. They may in themselves stigmatize.

Research Gaps and Challenges

Geographic gaps in the evidence base were mentioned earlier, with data tending to be somewhat overconcentrated on smallholder farming households in southern and eastern Africa. But there are also thematic gaps and challenges. First, although the two-way nature of AIDS–food insecurity interactions is increasingly recognized, far more attention remains focused on the impacts of AIDS on food security than on the other direction, how food and nutrition-security outcomes, policy, and practice may contribute to the spread of HIV. Methodological challenges include how to measure the actual presence of HIV without testing (is "chronic illness" or adult death an appropriate indicator?), how to disentangle HIV/AIDS effects from other stresses and shocks, how to go beyond cross-sectional studies to effectively track the dynamic interactions between HIV and food security and their micro–macro links, and how to monitor and evaluate the various remedial responses and interventions? Though progress is being made, as reflected in the authorship of

chapters here, more interdisciplinary studies are needed involving collaborations between researchers from different disciplines and perspectives in order to truly understand why the interactions between HIV/AIDS and food and nutrition security play themselves out differently in different contexts.

Old methods and tools may in some cases not suffice. As with the example of macroeconomic impact assessment, Stillwaggon (this volume) asserts that global health policy is trammeled by reliance on tools of epidemiology and health economics that are too rudimentary for understanding a complex epidemic. Public health problems of populations in poverty are interrelated, synergistic, and they are virtually ubiquitous in poor populations. Attempts to isolate the effects of vitamin A or malaria or worms on HIV transmission may be confounded by other endemic conditions, and treatment of any one condition may be constrained by the persistent impact of others. Global AIDS policy is paralyzed because epidemiologic methods demand a "smoking gun" as evidence of relationships between HIV and the endemic conditions of malnutrition, parasites, and infectious disease. Such a burden of proof is inappropriate because interventions to reduce malnutrition, parasite load, and infectious diseases are beneficial in themselves (Stillwaggon, this volume).

Propensity score matching (PSM) may be useful in the measurement of the impacts of adult illness and death on crop production. In Rwanda, Donovan and Bailey (this volume) used a combination of cross-sectional and panel data to construct the counterfactual situation required to estimate HIV/AIDS impacts. This application demonstrates that, given appropriate variables and sample size, PSM enables analysts to estimate the impacts of adult illness and death using cross-sectional data with recall complemented with a small amount of panel information. Although panel data are preferred for the econometric estimation of impacts, governments and development practitioners cannot always wait for the ideal data to inform local policy decisions.

An overriding challenge lies in capturing the diversity and context specificity of impacts and interactions without thwarting action. How can one achieve a policy-amenable synthesis of multiple findings that reflect the context specificity of interactions? And how, against a backdrop of thousands of AIDS deaths every day, can one do this in real time? Though research on impacts has grown enormously over the last few years and much has been learned, more case study research is needed to respond to the diversity of interactions in different settings at different points on the epidemic curve. Tools such as the HIV/AIDS lens accommodate the ground realities and facilitate the use of local knowledge to generate appropriate responses in a timely way. Parallel to this, a well-publicized and accessible library of documented experience needs to be built up.

Responding to Interactions

Work aimed at elucidating the interactions between HIV/AIDS and food and nutrition security has been highlighted above. In this section, the focus switches to the responses being made by households and communities and, through policies and programs, by governments and international agencies.

To ensure food and nutrition security in the context of HIV/AIDS, there is a growing consensus, reinforced in Durban, on what is essentially a three-pronged strategic approach: to strengthen household and community resistance and resilience, preserve and augment livelihood opportunities for affected communities, and ensure that there are safety nets in place for those who need them. The emphasis in mitigation strategy needs to be on strengthening resilience, the ability of households and communities to adapt livelihood strategies so as to bounce back from the shock of AIDS. Policy needs to draw on what is working already in communities where proactive responses are under way. This is quite distinct from any notion of leaving it to the communities to "cope." Rather, it is to maximize learning from community innovations (for reasons described in "Community-Driven Responses" below) as to what works where and why. Where households' and communities' capacity to respond effectively has been exceeded, a broad-based social security system offering minimal benefits or specifically targeted support programs will in the short and medium term be important for mitigation. These three strategies should be pursued simultaneously, based on the different comparative advantages of all stakeholders from households to national governments and international agencies.

Given the evidence of interactions described in the first section, what type of options exist for responding to the AIDS–food insecurity nexus? After a discussion of community responses and the potential of renewed attention to community-driven development, the key issues of scaling up, multisectoralism, and mainstreaming are discussed below. This is then followed by discussion of specific intervention options highlighted in Durban. Again, the intention is to capture and synthesize the key conference presentations and discussions, not to provide a comprehensive review. It is also worth remembering the two mutually reinforcing rationales for responding to interactions: first, to improve the chances that food and nutrition security policies and programs can achieve their original objectives in a heavy AIDS context, and second, to contribute to the multisectoral response to HIV/AIDS.

Community-Driven Responses

The Durban conference highlighted the differentiated impacts of HIV and AIDS on communities and the variety of attempts they make to improve their resistance to HIV spread and their resilience to AIDS impacts. Communities have responded in innovative ways, including labor sharing, orphan support, community-based

childcare, community food banks, credit schemes for funeral benefits, and new ways of reducing the time and energy of domestic tasks such as fuel and water collection and food preparation, to name but a few (see Gillespie and Kadiyala 2005).

In the context of high HIV prevalences and associated stigma, community-driven approaches, with their advantages of local knowledge, may represent an untapped resource for addressing the HIV/AIDS–food insecurity nexus. Like the problem itself, community-led approaches are naturally more "multisectoral" and cross-cutting. Unlike vertical sectoral programs that tend to focus narrowly on infected individuals, they focus on affected communities.

The issue of capacity to respond is critical, particularly as AIDS itself is eroding local capacity. Tony Barnett warns against defaulting to "installed capacity"—the fact that certain vertical program infrastructures are in place does not mean these are the most appropriate ones to employ. Binswanger, Gillespie, and Kadiyala (this volume) point to evidence from the field on the existence of latent community-level capacity including unemployed or underemployed youth. Resources could be applied to developing appropriate community responses to AIDS, thus obviating constraints on personnel experienced in scaling up vertical programs. Investing in local institutions through support to decentralization could go a long way in addressing remaining evidence gaps too, as communities have local knowledge, but they often lack power and resources. To support such new approaches, donors need to alter their time horizons, and they need to be more flexible.

In the context of AIDS, this is new ground. Important remaining questions include: What scope is there for new approaches to pooling labor and resources in affected communities? Can win-win approaches be found? Can communities find ways to protect the entitlements of affected households, enabling them to equitably exchange what they have (e.g., land they can no longer cultivate) for what they need (e.g., food)?

Scaling Up

Responses need to recognize the diversity of impacts, but they also need to be large-scale. In a study of a community-led program in Malawi cited by Binswanger, Gillespie, and Kadiyala (this volume), contextual factors for scaling up, including an enabling policy environment and a strong governmental commitment, were important. The adoption of a community mobilization model through capacity strengthening of district, community, and village AIDS committees, a commitment to documenting and disseminating lessons learned, and the drive to reach more affected populations through establishing partnerships were key organizational factors. Community-specific factors include leadership within the community, whether the communities are urban or rural (rural communities being easier to

mobilize), the nature of livelihoods, and the history and culture of the communities with respect to collective action. Joint planning with communities for a phasing down of NGO presence and scaling up of the role and responsibilities of the local AIDS committees and funding mechanisms were also identified as critical in enabling and sustaining the scaling up of collective action (Kadiyala 2004).

Scaling up may be pursued along various dimensions. Quantitatively, it may be viewed as the rolling out of various programs to reach more people who can benefit from them. The development of networks for research and action (e.g., RENEWAL) is another approach to simultaneously increase capacity, communications, and the coherence and scale of response. Community radio and Internet portals are useful for communicating, strengthening capacity, and scaling up ideas and innovations. Another approach to increasing the scale of the organizational response is through mainstreaming.

Multisectoral Approaches and Mainstreaming

AIDS is a multisectoral issue requiring a multisectoral response. Several rationales have been invoked. Multisectoral programming is needed to increase the organizational scale of the response to HIV/AIDS for the following reasons:

- Because the difference between behaviors of people in high- and low-prevalence areas is smaller than that between their environments, which in turn are shaped by many sectors. Many sectors both affect, and are affected by, AIDS. The fact that HIV epidemics are endogenous to livelihood systems, not exogenous, implies a responsibility for different sectors to be part of the solution.

- Because there are positive synergies among prevention, care and treatment, and mitigation that may be better exploited in a multisectoral approach.

- Because original international and sectoral goals (e.g., the Millennium Development Goals in many countries) may not be achieved unless HIV/AIDS implications are taken on board.

- Because it is simply not enough to mainstream HIV/AIDS within only one or two sectors (e.g., just health and agriculture).

UNAIDS has recognized this in its promotion of the "Three Ones" principle: one agreed national framework of action against AIDS, one national AIDS coordinating authority with a broad multisectoral mandate, and one agreed country-level monitoring and evaluation system.

Multisectoral approaches to HIV/AIDS control will involve (but not be limited to) mainstreaming of HIV implications into the policy and practice of many sectors. But, as Gavian, Galaty, and Kombe (this volume) stress, multisectoralism is more than simply "many sectors," and it goes well beyond policy mainstreaming. Communities are not sectors, but they are, or they should be, part of multisectoral responses. Binswanger, Gillespie, and Kadiyala (this volume) highlight lessons learned from "Integrated Rural Development," a failed centralized and state-driven approach to rural development, and show why highly decentralized and community-driven approaches (as discussed above) with strong private sector involvement, hold great potential for avoiding difficulties in the coordination and execution of multisectoral programs.

Mainstreaming is not a one-time event but a continual process of learning, synthesizing, and acting. It has two dimensions. The first is the personal: adjusting the mindsets of the organization and its individual staff in order to internalize the HIV/AIDS issue into the core of their perceptions and programming. The second (professional) is specifically technical or operational: identifying the most beneficial ways of giving practical expression to these concerns through the design and delivery of appropriate project activities. In addition to workplace policies, mainstreaming HIV/AIDS encompasses strategic planning and all stages of the program cycle from situation analysis and project design to implementation, monitoring, and evaluation.

Mainstreaming does not imply that an organization should suddenly start undertaking new tasks for which it is not equipped. Rather, it should continue to focus on its core business but view it through the lens of its interactions with HIV/AIDS. Drimie and Mullins (this volume) employ a livelihoods approach to focus on risk and vulnerability (and their positive flipsides, resistance and resilience) using an HIV/AIDS lens but move on to use a more generic "health and development" lens.

Reviewing progress on the ground, Gavian, Galaty, and Kombe (this volume) found an upswing in the number of countries with comprehensive, multisectoral national AIDS strategies, but that implementation lags. The World Bank's (2004) "Turning Bureaucrats into Warriors" publication and Multicountry AIDS Program (MAP) Interim Review 2004 speak of a "somewhat half-hearted" introduction into many ministries, with "cookie cutter" sectoral plans tending to ignore the local context; line ministries adopting workplace action plans yet failing to consider programs for their constituencies and failing to submit fundable proposals and workplans. A 2003 UNAIDS survey in 63 countries found that only 13 percent had actually made progress in implementing sectoral plans.

Tracking the progress or the bottlenecks in multisectoral implementation requires appropriate HIV-relevant indicators to be built into routine monitoring

and evaluation systems of many sectors, including gender-sensitive indicators of livelihoods, food and nutrition security, and stigma.

Enhancing Learning and Innovation

The large-scale, long-wave, and cross-cutting nature of AIDS epidemics has challenged both learning and implementation processes, creating tensions between research and action, between researchers and activists, as well as between proponents of different strategies such as prevention versus treatment. In the face of complex interactions, researchers are hesitant to generate policy recommendations. And yet, the epidemic (or "endemic," as Barnett terms it) continues regardless.

There are lags between HIV and AIDS and there are lags between policy change and results. Because many policies and programs take years to implement and provide tangible results, there is urgency to put in place an appropriate set of public investments and programs that can cushion the blow by the time the long-wave impacts of AIDS are in full force (Jayne et al., this volume). Proactivity not reactivity is the emphasis to ensure that policy gets ahead of the epidemic curve. To facilitate this, there is thus an urgent need for research to be linked with action, both ways: with research informing action while implementation generates challenges and questions for operational research. This is the essence of action research.

Part of the shift "from evidence to action" will come through a wider adoption of learning-by-doing approaches. Policy needs to support and encourage timely and locally relevant community responses that naturally respond to diversity. But for the "doing" to actually be accompanied by real-time "learning," good systems of process and outcome monitoring and communications are required.

In his keynote address, Tony Barnett spoke of a 5- to 10-year window of opportunity presented by the ongoing (albeit slow-moving) antiretroviral drug rollout. Because of likely difficulties for large numbers of people meeting and sustaining drug adherence thresholds of greater than 95 percent, there is a significant likelihood that viral resistance will develop and spread, undermining the efficacy of existing drug regimens. During this window of time, Barnett asks, how do we literally get ahead of the epidemic curve and promote/enable the development of innovations that will be useful for current and future AIDS control? Such innovations, moreover, will need to be for collective, not simply personal, gain.

The Farmer Life Schools approach is one example of an innovative modification of an earlier approach to agricultural extension (Djeddah, Mavanga, and Hendrickx, this volume). Farmer Life Schools originated from Farmer Field School discovery-based learning approaches to help groups of farmers gain a deep understanding of ecological concepts as well as their practical implications. In the Farmer Life Schools adaptation, this was extended to human ecology, and the same processes

have been translated to HIV/AIDS and other livelihood issues. Its latest incarnation, the Junior Farmer Field and Life Schools (JFFLS), has made the link to youth, often orphaned children, who have not been able to learn new agricultural skills and practices from their parents who died too young.

Biostructural intervention is another example of innovation. In this case, simultaneously maximizing the benefits people derive from living natural resources (e.g., through agriculture) while ensuring they are protected from HIV (Loevinsohn, this volume). In India, rural "distress migrants" are at heightened HIV risk and may spread the virus when they return home. Such risky migration has been reduced by some watershed development (WSD) programs through efforts to restore degraded soils and vegetation, capture rainfall, and extend irrigated cultivation. Drawing on recent data from South India, Loevinsohn uses an epidemiologic model to simulate various scenarios. Results suggest that WSD, through reducing migration, may already be preventing significant numbers of HIV infections, in some contexts at a cost per infection averted comparable to single-purpose interventions such as condom promotion. But such programs may also harm the landless, so securing these benefits and avoiding any adverse effects require attention to precisely those issues that have challenged large WSD: interinstitutional cooperation, sustained and flexible local management, equitable sharing of benefits, and effective participation by women, the landless, and other marginalized groups. Loevinsohn concludes that AIDS effectively sharpens the incentives to get WSD "right."

Interventions

When it comes to interventions aimed at combating the HIV/AIDS–food insecurity nexus, the evidence base remains weak. Little is known about designing cost-effective solutions, scaling them up, situating them in the larger strategies for obtaining complex development objectives, or monitoring the full multidimensional nature of such interventions. "Best practices" are often announced that have never been properly evaluated or compared. Where organizations have launched interventions, they are usually isolated, small scale, with minimal monitoring, and they are rarely well evaluated.

The conference made a plea for more rigorous evidence of what works, where, and why. Better links are needed between programmers and researchers to achieve informed action. Interventions with well-functioning management information systems that are amenable to operational research become more effective over time, as well as promoting wider learning. Many NGO participants in particular recognized the need for learning, documentation, and dissemination to become higher priorities in their work.

Interventions aimed at responding to the interactions described earlier may be categorized in various ways. A multiplicity of impacts translates into a potential role for many interventions. Again, without any claims to being comprehensive, here are three of the main intervention options.

Agriculture

Conventional wisdom prioritizes technologies and crops that save labor in the context of HIV/AIDS. Jayne et al. (this volume), however, believe this to have been overgeneralized, although such technologies may be appropriate for certain types of households and regions. Dorward and Mwale (this volume) concur, arguing that laborsaving technologies may even be harmful if they further drive down wage rates that are already falling as a result of HIV-induced cash constraints on ability to hire. Emphasis may need to be placed on other ways of assisting these households, such as cash transfers to help them with labor hire.

With high population density and very small average agricultural holdings, Donovan and Bailey (this volume) found that Rwandan households appear to use labor replacement strategies rather than laborsaving technologies to deal with labor shortages. They found a disturbing trend of households shifting away from crops that provide erosion control, thus endangering future soil fertility. Because affected households consequently tend to be in the lower income groups, agricultural policy that can generate rural income growth from diverse sources will assist these and other poor households.

Raising living standards of households and communities over the long-run through productivity-enhancing investments in agricultural technology generation and diffusion, improved crop marketing systems, basic education, infrastructure, and governance will improve their ability to withstand the social and economic stresses caused by HIV/AIDS (Jayne et al., this volume).

But what types of modifications are needed to ensure that agriculture is "HIV-responsive" and that it plays its part in strengthening resistance and resilience to HIV/AIDS? Bishop-Sambrook et al. (this volume) address this through applying an HIV/AIDS lens to the commercialization of agriculture in Ethiopia. Initiatives to strengthen the market orientation of agricultural production present both an opportunity and a threat in the context of a rural AIDS epidemic. Although any contributions toward reducing poverty and the need to migrate to find work may reduce susceptibility to HIV, the authors state that there are very real risks that the additional cash and the stimulus to travel further afield to market produce could have the opposite effect. Hence, activities associated with promoting the marketing of agricultural products need to be designed with care to ensure that they play a

role in arresting, rather than hastening, the spread of the disease in rural communities. They go on to outline several opportunities for addressing HIV/AIDS through market-led growth strategies. Examples include the following:

- Raising awareness and understanding about HIV and AIDS among groups associated with agricultural production and marketing initiatives who are traditionally overlooked because they do not usually belong to formal associations (such as petty traders and retailers, itinerant traders, transporters, owners of hotels and drinking houses).

- Reducing risk of exposure to HIV infection. For example, reducing the need and desire to migrate by improving livelihood options in and around the community, extending the growing season through developing small-scale irrigation, product diversification, agroprocessing, strengthening existing, and creating new, market linkages, and developing the farm input supply chain.

- Reducing vulnerability to AIDS impacts. For example, overcoming barriers to participating in agricultural production and marketing by affected households, such as their depleted resource base, their need to be close to home to tend to the sick, loss of key skills, and their inability to take on risk; using cooperatives and farmer organizations as entry points for mitigation, care, and support activities in communities by, for example, developing income-generating activities, savings, health insurance, or establishing a social fund to provide care for orphans.

Jayne et al. (this volume) conclude their extensive work by discussing four types of potential agricultural policies and programs: factor use and input markets, agricultural research and extension systems, commodity markets, and gender-differentiated resource allocation. In each category they describe clear options for strengthening the HIV-responsiveness of these policy instruments.

Another element of earlier conventional wisdom in this field suggested that AIDS was driving a shift to less labor-intensive and less nutritious crops among smallholders, such as cassava. But how much of this is actually driven by AIDS? Jayne et al. (this volume) point to major changes in agricultural policy that have shifted some farming systems from maize toward tuber crops. Many countries in eastern and southern Africa had formerly implemented state-led maize promotion policies and subsidies on fertilizer distributed on credit to small farmers along with hybrid maize seed. These policies were either eliminated or scaled back significantly

in the 1990s as part of economy-wide structural adjustment programs, reducing the financial profitability of growing maize. Cropping incentives prioritize other food crops, especially those relatively unresponsive to fertilizer application, such as cassava.

Social Protection

AIDS can be viewed as a "long-wave crisis" (Barnett, this volume) where, unlike classic, fast-onset emergencies, people do not recover well between crises, or it can be viewed as a "slow-onset disaster" (Wisner et al. 2004) or an urgent development challenge that requires a large-scale long-term response. Until now, AIDS has tended to be addressed either as a humanitarian issue (notably during the 2001–02 food crisis in southern Africa) or as an ongoing threat to development. In recent years, however, discussion has turned to whether these two perspectives need to be better linked. The notions of "developmental relief," "relief in development," and a contiguum approach (as opposed to an emergency to development continuum) have gained currency. Barnett (this volume) also argues for the need to review current paradigms of development and relief and strengthen the ability to switch rapidly between activities as people's needs and priorities change. Oxfam, too, is firmly behind such a contiguum approach, viewing the concept of a development path periodically interrupted by short emergencies as a fiction in the context of AIDS. Oxfam's support to social protection is predicated on the likelihood that at all times in all places people require access to support and interventions in relief, rehabilitation, and development to ensure that their basic needs are covered in the short term while longer term development opportunities are made available.

"Social protection" means different things to different people. Definitions differ with regard to the degree to which the envisioned protection extends to enhancing livelihoods, includes social insurance as well as assistance, and the degree to which it is advocated as a right rather than a reactive form of relief (Adato, Ahmed, and Lund 2004). Increasingly recognized as an essential part of social policy, social protection systems have been used to enable individuals, families, and communities to reduce risk and/or mitigate the impacts of stresses and shocks to their livelihoods. They may also be used to support people who suffer from chronic incapacities to even secure livelihoods, including people living with HIV. Interventions may include conditional and unconditional cash transfers, direct distribution of food or nutritional supplements, school-based food programs, price subsidies, agricultural inputs, public works programs, social health insurance, asset insurance, life insurance, and microfinance. In the context of AIDS, however, there is still little experience to build on, though there are signs that this is now changing. Several issues, including nutrition security, are important operational research priorities (Box 1.3).

Box 1.3 Operational Research Priority: Nutrition Security and HIV/AIDS

In addition to food security, nutrition security[a] has emerged as an important dimension in the prevention, care, treatment, and mitigation of HIV/AIDS. A focus on nutrition security can help reveal opportunities for effectively linking health services with food and nutrition policy in the context of HIV/AIDS. Current research indicates that good nutrition is important to the efficacy of medical interventions as it is to peoples' ability to resist and mitigate infection. There is currently a strong focus on clinical nutrition and HIV/AIDS in the context of issues such as infant feeding and the efficacy of antiretroviral therapy among malnourished populations (see Annex). This relates primarily to interactions within the individual body and their implications for health policy. Yet there have been few attempts to link nutritionists with agricultural economists and/or program managers to investigate the broader issue of community-level nutrition security and food policy and programming in the context of HIV/AIDS. Many of the food responses to date have revolved around delivery of food aid. What other longer-term options exist for ensuring nutrition security within affected communities? What does nutrition "through an HIV lens" look like, and what are the operational implications of rethinking nutrition from this perspective? Does nutrition offer an entry point for forging better links between public health and agricultural responses to AIDS?

[a] Food security here is concerned with physical and economic access to food of sufficient quality and quantity. Food security is necessary, but by itself insufficient, for ensuring nutrition security. Nutrition security is achieved for a household when secure access to food is coupled with a sanitary environment, adequate health services, and adequate care to ensure a healthy life for all household members.

In contrast, food assistance is a widely employed safety net in the context of HIV and AIDS, despite a paucity of evaluations of impacts on HIV-related target groups (Egge and Strasser, this volume). Key areas of expected effect include increases in daily food consumption by all household members and in money available for other needs and an overall increase in household food security. These key effects should in turn generate a cascade of secondary effects measurable by indicators such as anthropometrics, treatment adherence, school attendance, productivity,

and the degree of reliance on risky response strategies and on caregivers. Food aid–targeting design, however, tends to be oriented by certain types of people rather than the determinants of vulnerability, and this may lead to significant inefficiencies. Not all female-headed or orphan-fostering households, for example, are vulnerable. Where food assistance is required, there is an emerging consensus on the need for multiple criteria to target beneficiaries. Analyzing community health surveillance data, Egge and Strasser (this volume) suggest targeting efficiency could be improved by first differentiating households according to wealth category (using, for example, assets as a proxy) and then applying other criteria such as chronic illness. Drimie and Mullins (this volume) discuss ways in which a livelihoods approach can guide analysis to go further, to a better understanding of who is actually at risk or vulnerable, why, and how to improve their resilience.

Nutrition and Public Health

"AIDS is a development issue" may be an oft-repeated mantra, yet even in the health sector itself, accumulated knowledge and experience in the field of public health has hardly influenced AIDS policy and programming. Stillwaggon (this volume) argues that it is the same conditions that promote high prevalence of other infectious diseases and parasites that are responsible for the spread of the AIDS epidemic in poor populations. She calls for AIDS policy to address the mundane risks of growing up in environments that burden people with sickness and make them more susceptible to HIV. Programs to prevent HIV transmission are unlikely to succeed unless they address the underlying causes of its spread. HIV prevention must be based on scientific evidence regarding cofactor conditions, not, as they currently are, on unproven assumptions about the primacy of behavioral factors. In addition to food security, deworming, schistosomiasis prevention and treatment, and malaria control programs should thus be integrated as critical components of a broad-based approach to HIV prevention (Stillwaggon, this volume).

The WHO Consultation on Nutrition and HIV/AIDS in Africa (April 10–13, 2005) that preceded the IFPRI conference concluded with several key nutrition-relevant recommendations detailed in the Annex. In sum, these were aimed at strengthening political commitment and improving the positioning of nutrition in national policies and programs; developing practical tools and guidelines for nutritional assessment for home, community, health facility–based, and emergency programs; expanding existing interventions for improving nutrition in the context of HIV; conducting systematic operational and clinical research to support evidence-based programming; strengthening, developing, and protecting human capacity and skills; and incorporating nutrition indicators into HIV/AIDS monitoring and evaluation plans.

Conclusions

In many ways, HIV/AIDS is exposing the fragility of people's livelihoods, a fragility that derives from multiple sources of vulnerability, many of which interact and are worsened by AIDS. Poverty, malnutrition, and hunger have been around a lot longer than the virus. We should thus not be blind to AIDS, but nor should we be blinded by it. An HIV lens, not a filter, needs to be employed. Any move toward "AIDS exceptionalism" will not improve understanding of these important interactions and may even close off some important opportunities for effectively responding.

Three overlapping sets of problems therefore need to be kept in focus: HIV/AIDS, food insecurity, and malnutrition. Not only do these problems overlap significantly, they interact too. We need to keep track of the nature, magnitude, and outcomes of these interactions so that responses are appropriate and effective in the context of high or rising HIV prevalences.

Geographically and disciplinarily, there is a need for breadth as well as depth. Much past work on the HIV/AIDS–hunger nexus has been undertaken in Sub-Saharan Africa where the risks and impacts are most common and most serious and where there is more experience to build on. But it is imperative that future work extends beyond Africa, especially to Asia, in order to be better prepared in other areas where such impacts may soon be experienced. In terms of disciplinarity, diversity of impacts needs to be matched by diversity of researchers, working collaboratively. In order to come to grips with this dynamic new universe, and effectively fill these knowledge gaps, bridges need to be built between social scientists, epidemiologists, public health specialists, nutritionists, and agricultural economists.

Large-scale responses to the diversity of impacts and that are relevant to the local context are now needed. These responses must go well beyond the addition of components to existing vertical programs and structures.

Greater emphasis needs to be placed on learning from, supporting, and enabling community-driven responses and innovations. Communities have better, more relevant information (that responds to the diversity and context-specificity), and they often have latent, untapped capacity. Transparency and accountability may also be enhanced through local peer oversight. Communities have incentives to act, and they are responding, albeit not always optimally. But in general there is a need to start with an understanding of which community-driven responses are working before looking at ways to provide relevant support where local capacity is exceeded. This in turn requires a clear articulation of roles of other stakeholders, including the state, in a broad-based system of social protection.

In the face of the challenges posed by the interactions among HIV/AIDS, food, and nutrition security, there is no convenient magic bullet intervention and no blueprint. The fact that "business as usual" is not working well, however, does

not mean that everything needs to change. Rather, a truly multisectoral involvement is required, not the perfunctory addition of more (usually vertical) HIV activities on to sectoral plans. Mainstreaming starts with decisionmakers internalizing AIDS as a development issue, leading in turn to a critical review of existing policies and programs through the lens of their growing knowledge of AIDS interactions. It is a process involving continual reflection, and the progressive application of principles and processes for responding rather than pulling predesigned interventions off the shelf.

Mounting awareness of the links between HIV/AIDS and food and nutrition security creates an opportunity for food and nutrition professionals to develop the conceptual links that, as Gavian, Galaty, and Kombe (this volume) point out, are lacking in current multisectoral frameworks, to provide an empirical basis to assess impacts and costs, propose indicator and monitoring systems, and design appropriate food- and nutrition-relevant interventions.

In all this we must collectively balance the need to know more with the urgent need for large-scale action. As Binswanger, Gillespie, and Kadiyala (this volume) caution, we must not fall into the "evidence trap"; a lack of knowledge is rarely an impediment to action. Although gaps remain in the literature that will require dedicated research to address, there is need for a shift in emphasis toward "learning-by-doing," or action research. For the "doing" to be accompanied by learning, as mainstreamed programs come on stream, the development and maintenance of strong systems of HIV-relevant monitoring, evaluation, and communications will be crucial. The heterogeneity of much recent evidence may preclude generic policy recommendations, but the fact that knowledge gaps remain is no excuse for inaction.

Notes

1. The scope of the IFPRI conference essentially spanned the micro- to macroenvironmental levels, whereas the WHO consultation primarily focused on the two inner circles: the individual-level microbiological and microenvironmental levels.

2. The word "we" is used throughout this overview to denote the primary audience of this document, namely policymakers; national, regional, and international planners; program managers; representatives of civil society; community-based organizations; and researchers whose work (actually or potentially) contributes to combating food and nutrition insecurity, HIV/AIDS, or both.

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