

The Impact of HIV/AIDS on the Economy, Livelihoods and Poverty of Malawi



Foreword

In the worst affected countries HIV/AIDS implies a catastrophe not only for the individuals and households affected, but for the entire nations. HIV/AIDS is a slow motion catastrophe with long time lags. It takes some five to ten years from the time of a spread of the infection in a population, until the consequences in the form of illness and death appear in full. HIV/AIDS is also a catastrophe without a clearly visible end. Hence, it is not a question of coping with the catastrophe for a limited period of time where after a return to the old well-trodden development path will be possible, but to fight the pandemic while at the same time adjusting and preparing for the fact that the development in the worst affected countries under the foreseeable future will be conditioned by the catastrophe and take a new, still partly unknown shape.

We do not have precise knowledge of how AIDS will shape development in the worst affected countries. As the conditions for socio-economic development are radically altered past development trends are inevitably broken and uncertainty about the road ahead increases. The experiences of yesterday lose value as instruments for prognoses and the rear-view mirror no longer functions as a compass for charting the course ahead.

However, the socio-economic consequences of AIDS need not just be a question of guesswork. In a number of countries in southern Africa widespread HIV infection has already translated into a full-blown AIDS epidemic, and at least early socio-economic consequences of AIDS and the societal and individual responses to these can be empirically studied. Furthermore, theories of economic development and of endogenous growth provide us with a theoretical basis for informed guesses and for formulating and testing hypotheses. Indeed, there is today a considerable knowledge about the impact of AIDS in specific areas, on specific sectors as well as, increasingly, on the individual and household level, much of it based on case studies. Yet, surprisingly little work has been done to bring together this knowledge to arrive at a comprehensive picture of the dynamics involved, of the interplay between impact of and adjustment to AIDS and its overall socio-economic consequences. The present study aims to address this need, focussing on Malawi as a representative case.

The present study has been undertaken by four Swedish scholars based on a joint initiative between Sida and the Ministry of Economic Planning and Development in Malawi.¹ The purpose is to present a

¹ The opinions and conclusions presented in the study are those of the authors and do not necessarily reflect the views of either Sida or the Ministry of Economic Planning and Development.

comprehensive overview of both known and expected economic and social consequences of HIV/AIDS, linking the consequences at the individual and household level to those at the overall national level and looking at both short and medium-term effects and the more long term ones. While the focus of the study is on Malawi, many of the implications and conclusions arising from the study are likely to have relevance for the region as a whole. It is our hope that the study will provide valuable input to a discussion on what amounts to one of the greatest development challenges facing Sub-Saharan Africa and contribute to informed policy making and development cooperation.



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Executive Summary

Malawi is one of the poorest countries in the world. With an HIV prevalence of around 14 per cent of the adult population, it is also one of the hardest hit by HIV/AIDS. The HIV/AIDS disaster has come as an additional burden on households, communities, public institutions and private enterprises at a time when margins were already small or non-existent.

Most of those who are HIV-positive are still healthy and do not know that they are infected. What can be registered today as consequences of the epidemic therefore only represents the tip of the iceberg.

The purpose of the present report, commissioned by the Swedish International Development Cooperation Agency (Sida), is to analyse the impact of HIV/AIDS on people's livelihoods and on the overall socio-economic development of the country.

A number of different factors are responsible for the high incidence of HIV/AIDS in Malawi. As in many other countries, gender inequality and the subordination of women in sexual relations are two of the main driving forces of the epidemic. Harmful traditional practices, such as "dry sex" and various initiation ceremonies, also contribute to the spread of the disease. Poverty and vulnerability are other factors that increase the risk of being infected, as many girls and women engage in commercial sex as a survival strategy.

HIV/AIDS is not a gender-neutral disease. More Malawian women than men are presently infected, and the ratio of female of male HIV prevalence among adolescents is around five to one. Girls and women are also responsible for the lion's share of care and support when a family member falls ill.

At the household level, the costs of HIV/AIDS are dramatic. In addition to the direct costs in the form of medical expenses, transport costs for patients seeking treatment, funeral costs and other out-of-pocket expenditures, the indirect costs in the form of loss of labour within the household represent an extremely heavy burden for the family. The nature of the disease also makes it common for children to lose both their parents in AIDS-affected households. The traditional safety net in the form of the extended family is put under severe strain as the number of AIDS orphans increases.

One coping mechanism which many households have to resort to is to sell assets – bicycles, radios, livestock, etc – when a family member falls ill. Surveys indicate that around 40 per cent of Malawian households

affected by chronic illness had to sell a portion of their assets to buy food or to pay medical or funeral expenses. Other coping mechanisms include incurring debt or taking children out of school.

Over 80 per cent of the population in Malawi have agriculture as their main occupation. While the prevalence of HIV is appreciably higher in the cities than in rural areas, the majority of Malawi's AIDS victims are small-scale farmers. Food security often deteriorates substantially in families affected by HIV/AIDS, and the alarmingly high rate of malnutrition is increasing as a direct consequence of HIV/AIDS. A coping strategy often reported among smallholders suffering from shortage of labour is to resort to less labour-intensive – and, in general, less valuable and nutritious – crops.

While the most dramatic effect of HIV/AIDS is felt at the household and community level, the epidemic is also having a pronounced effect on the real economy. The major impact is the loss of human capital, with strongly negative consequences for future growth prospects. Since HIV/AIDS, contrary to most epidemics, mainly affects the most productive age groups of the population, the impact on the supply of labour is very strong. Already close to 20 per cent of the economically active population have lost their lives because of AIDS. Further, the number of prime-age adults dying from AIDS each year is around 60 000. In addition, absenteeism has increased drastically because of the need to attend funerals, and HIV/AIDS-related morbidity has a negative impact on labour productivity.

All economic sectors are affected. Smallholder agriculture suffers both because it is labour-intensive and because of loss of income, which reduces the farmers' possibilities to invest in improved seeds, fertilizers and soil preparation. In the manufacturing sector, which has been contracting for over a decade, it is difficult to isolate the effects of HIV/AIDS from other factors such as import liberalisation and an unstable macroeconomic, political and institutional environment. Still, it is clear that production costs have increased and labour productivity declined as a direct consequence of HIV/AIDS.

The impact of HIV/AIDS on the public sector resembles in many ways the impact on agriculture and other economic sectors. Loss of experienced workers, increased absenteeism and attrition, high costs for the replacement of staff affected by HIV/AIDS and, in general, lower productivity in the delivery of public services have accompanied the spread of the disease. Since the incidence of HIV/AIDS during the first phases of the epidemic has been highest among well-educated urban dwellers and in key public services such as health, the police and judiciary and agricultural extension services, the impact on the public sector has been disproportionately large.

In education, HIV/AIDS-related morbidity and absenteeism among teachers have become heavy burdens on the supply of education. While there is no evidence showing that teachers in Malawi have a higher HIV-prevalence than other population groups, the loss of experienced teachers poses a serious threat to the future formation of human capital. In the health sector, which is also of paramount importance for the country's stock of human capital, problems are particularly severe. Patients suffering from HIV-related diseases, including opportunistic infections such as tuberculosis, occupy over 70 per cent of all hospital beds. Furthermore, the exodus of a high percentage of Malawi's nurses, primarily to Great Britain has exacerbated the problems with a shortage of medical staff.

By and large, Malawi's public sector was malfunctioning even before HIV/AIDS. Problems included high vacancy levels, high attrition rates, inflexible recruitment procedures, financial constraints, a poor incentive structure and shortages of skilled staff. Malawi's public sector thus had an institutional vulnerability to the impact of the epidemic, which has served to accentuate already existing problems.

The combination of lower tax revenue – i.e. lower than in a non-AIDS scenario – and higher demand for public expenditure in areas such as health, social security, care of orphans and others will lead to fiscal problems. Those issues need to be managed carefully if a return to large macroeconomic imbalances is to be avoided.

As to the long-term consequences of HIV/AIDS on economic growth and poverty, any attempt to make forecasts about the distant future is surrounded by a high degree of uncertainty. There are simply too many unknowns, not least related to non-economic factors such as changes in social norms and values, which are likely to affect both the spread of the disease and its economic impact. While the report does try to identify a number of coping strategies and behavioural changes that can be observed already today, it would be misleading to try to quantify the socio-economic effects and translate these into long-term projections of, for example, growth of production, investment and per capita income.

Instead of presenting an economic model that would convey a false sense of precision to our analysis, our discussion about long-term consequences focuses on a number of “mitigating” and “aggravating” factors that may indicate how Malawi will be able to cope with the HIV/AIDS disaster. Among the mitigating factors, i.e. circumstances that in the long term may allow Malawi to overcome at least some of the negative effects, could be mentioned the following:

- *Knowledge* about the disease is widespread; the overwhelming majority of the people in Malawi know about the existence of HIV/AIDS, and have a basic knowledge about how it is transmitted, and how one can protect oneself.
- As a consequence of the widespread public knowledge about HIV/AIDS, *attitudes* – towards, for example, commercial sex, multiple sex partners and extra-marital sex – are changing. Malawi is, at least among certain sectors of the population, undergoing a silent revolution in terms of increased openness about sexuality and reproductive health. *Sexual behaviour* is also changing – albeit very slowly.
- The challenge posed by HIV/AIDS has had the positive side effect of bringing people together to confront the disease. Cooperation has in many areas been improved between government institutions and community-based organisations.
- Government policies are basically sound in principle; rather, what is lacking is implementation, largely as a result of the shortage of human and financial resources and institutional capacity.
- The prospects for international support appear good.
- Medical progress is likely to continue, and the existence of ARV treatment means that the chances of prolonging the lives of HIV-positive patients are drastically better today than a few years ago. In a short to medium-term perspective, the envisaged scaling-up of ARV therapy will, however, be an additional burden on Malawi's fragile health system.
- The negative demographic shock that AIDS implies in the short and medium term may be reversed: there is reason to believe that the demo-

graphic situation will improve in a longer-term perspective, signifying a higher share of the population in the most productive age groups.

The aggravating factors are largely those indicated earlier: increased poverty and vulnerability at the household level, an increased number of orphans and a concomitant strain on the extended family (possibly accompanied by a rise in juvenile crime and violence), loss of human capital and severe pressure on key sectors such as health and education, higher costs of production, and the danger of a further erosion of Malawi's international competitiveness.

Probably the most serious aggravating factor is the deep-rooted tradition of male dominance in the Malawian society. The subordination of women in connection with sexuality appears highly resilient to change and is a formidable obstacle. Key to success in the fight against the epidemic is the empowerment of women in all spheres of economic and social life, including sexual relations.

The discussion about long-term consequences ends with a brief presentation of two radically different scenarios: one "disaster scenario," in which HIV/AIDS leads to a virtual economic, institutional and social collapse, and another, more optimistic, scenario in which a number of different factors enable Malawi to cope with the disease in a way that strengthens rather than weakens social cohesion and the country's institutions, thereby making long-term consequences appreciably less dramatic than in the most pessimistic scenario.

The objective of this study has not been to make an evaluation of the Malawian Government's policies, or to present detailed recommendations about what to do. Nevertheless, the report ends with a brief discussion about policy implications and recommendations, including suggestions directed to the donor community. This final part is very incomplete, and will be developed further after discussions with our Malawian and international colleagues and stakeholders.

List of Acronyms

ACB	Anti Corruption Bureau
ANC	Antenatal Clinic
ART	Antiretroviral Therapy
ARV	Antiretroviral
CBO	Community-Based Organisation
CERT	Centre for Educational Research and Training
CIDA	Canadian International Development Agency
CHAM	Christian Hospital Association of Malawi
DFID	Department For International Development (United Kingdom)
DHRMD	Department of Human Resource Management and Development
DHS	Demographic and Health Survey
EHP	Essential Health Package
EU	European Union
FAO	Food and Agriculture Organisation
FBO	Faith-Based Organisation
FDI	Foreign Direct Investment
GDI	Gender-related Development Index
GDP	Gross Domestic Product
GF/GFTAM	Global Fund to Fight AIDS, TB and Malaria
GoM	Government of Malawi
HAART	Highly Active Antiretroviral Therapy
HIPC	Heavily Indebted Poor Countries
HIV	Human Immuno-deficiency Virus
HERA	Health Research for Action
HDI	Human Development Index
HDR	Human Development Report
IFPRI	International Food Policy Research Institute (Washington, D.C.)
ILO	International Labour Organisation
IMF	International Monetary Fund

ISS	Institute for Security Studies
MBCA	Malawi Business Coalition against AIDS
MCS	Malawi Civil Service
MEJN	Malawi Economic Justice Network
MEPD	Ministry of Economic Planning and Development
MK	Million Kwacha
MMR	Maternal Mortality Rate
MoA	Ministry of Agriculture and Food Security
MoAI	Ministry of Agriculture, Irrigation and Food Security
MoEST	Ministry of Education Science and Technology
MoE	Ministry of Education and Human Resources
MoF	Ministry of Finance
MoG	Ministry of Gender
MoH	Ministry of Health
MoWD	Ministry of Water Development
MPS	Malawi Police Service
MRA	Malawi Revenue Authority
MSF	Médecins Sans Frontières
MTCT	Mother-to-Child Transmission
NAC	National AIDS Commission
NGO	Non-Governmental Organisation
NORAD	Norwegian Agency for Development Cooperation
NSF	National Strategic Framework
NSO	National Statistics Office
ORT	Other Recurrent Expenditure
PLWHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother-to-Child Transmission
PRGF	Poverty Reduction and Growth Facility
PRS(P)	Poverty Reduction Strategy (Paper)
SADC	Southern African Development Community
Sida	Swedish International Development Cooperation Agency
SMP	Staff Monitored Programme
SMR	Standardised Mortality Rate
SRH	Sexual and Reproductive Health
SSAJ	Safety, Security and Access to Justice
STI	Sexually Transmitted Infection
SWAp	Sector-wide Approach
TA	Traditional Authorities
TB	Tuberculosis
TFP	Total Factor Productivity
TFR	Total Fertility Rate
TIP	Targeted Input Programme
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme

UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD/US\$	US dollar
VCT	Voluntary Counselling and Testing
WDR	World Development Report
WHO	World Health Organisation
WLSA	Women and Law in Southern Africa
YONECO	Youth Net and Counselling

Introduction

Malawi is one of the poorest countries in the world. Of the 177 countries ranked according to UNDP's Human Development Index, Malawi occupies place number 165.

Two thirds of Malawi's population of 12.5 million live below the national poverty line.² But poverty is not evenly distributed. Malawi's Gini index, which measures inequality, is estimated at 0.50, indicating an appreciably more unequal distribution of income than countries such as Ethiopia, Tanzania or Mozambique.³

Subsistence agriculture is the mainstay of the economy, accounting for around 40 per cent of GDP and over 80 per cent of total employment. The average size of a family farm is less than 0.3 hectares of cropland per capita, and it is less than 0.2 in the southern, most densely populated and poorest part of the country.⁴ The urban population, rising rapidly but still very small, is some 16 per cent of the total population.

Economic growth has been sluggish for decades, with an annual growth of per capita income of only 0.2 per cent between 1975 and 2003.⁵ The 1980s were characterised by stagnation and decline, while the period 1994–99 witnessed economic recovery and rapid growth. Still, today's per capita income remains lower than in 1979, when average income is estimated to have peaked (UNDP, 2005).

Against this background of poverty and inequality, the effects on people's livelihoods of the HIV/AIDS pandemic can be expected to be dramatic. With an HIV-prevalence of around 14 per cent among adults, and appreciably more in urban areas and among pregnant women, Malawi is estimated to be the eighth worst affected country in the world. Over one million adults and children are believed to be living with HIV today. The vast majority of the carriers of the deadly virus do not yet know that they are infected.

The number of AIDS-related deaths since the first cases were diagnosed in the mid 1980s has reached 650,000, and an additional 70,000 deaths due to AIDS are expected each year. Close to half a million children in Malawi have lost one of their parents, or both, because of AIDS.

² Malawi's Poverty Reduction Strategy Paper (PRSP) 2002, p. 5

³ World Bank, "World Development Report 2005", Table A2.

⁴ PRSP 2002, p. 6.

⁵ UNDP, "Human Development Report 2005" (HDR), Table 14.

As a consequence of the AIDS epidemic, life expectancy has been going down for a number of years and is today less than 40 years.

When HIV/AIDS began to take a heavy toll in sickness and death in the 1990s, the Malawian economy and society were already under serious strain. The HIV/AIDS disaster came as an additional burden on households, public institutions and private enterprises at a time when margins were already small or non-existent. A factor aggravating the economic impact was the fact that during the initial phases of the disease the rate of HIV infection, and subsequent death from AIDS, was highest among urban and relatively educated people: teachers, government officials, doctors and nurses, policemen, and others.

The objective of the present report, commissioned by the Swedish International Development Cooperation Agency (Sida), is to analyse the impact of the HIV/AIDS epidemic on Malawi's economy, livelihoods and poverty. As stated in our Terms of Reference, the purpose is to present a comprehensive overview of likely consequences of HIV/AIDS at various levels, from short and medium-term effects on the household level to long-term macroeconomic effects.

The work was initiated in April 2005, when the team visited Malawi to establish contacts, conduct interviews and get access to relevant literature. It continued as a desk study until September 2005, when the team paid a second visit to Malawi in order to conduct further interviews and collect data.

It should be stressed that the availability of reliable data, not least information related to highly private and sensitive but crucial factors such as norms of sexual behaviour, attitudes and adjustment mechanisms, is scarce and frequently contradictory. As a consequence, part of our analysis has had to rely on primary data from only a few studies whose findings may not always be applicable to the entire country. Sometimes we have based our discussion – for example, on coping strategies and adjustment mechanisms – on research carried out in neighbouring countries that share some of Malawi's characteristics.

We would like to take the opportunity to thank our friends and colleagues in Malawi for the time they set aside to answer our questions and for the warm and generous support we have received during and after our visits. In particular, we would like to thank the Ministry of Economic Planning and Development (MEPD) for their valuable cooperation since the very beginning of our study. The openness and determination to confront the epidemic that we encountered throughout Malawi also impressed us, and is a great source of hope for the future.

The rest of this chapter discusses the spread and prevalence of HIV/AIDS in sub-Saharan Africa and, in particular, Malawi. Special emphasis is put on factors that drive the epidemic, including poverty, the situation of women, and the norms of sexual behaviour that facilitate the transmission of HIV. When possible – i.e. when studies and other sources of information so permit – we also attempt to identify adjustment mechanisms and indicators of behavioural change that should affect the future spread of the epidemic. The chapter also contains a discussion of the important and promising advances made in Malawi in its efforts to scale up life-prolonging Antiretroviral (ARV) treatment of HIV-positive patients.

Chapter 2 is a micro level analysis that explores the impact of HIV/AIDS on the individual, household and community level. Since the overwhelming majority of Malawians are small-scale subsistence farmers, particular attention is paid to issues related to coping strategies among smallholders whose households are affected by illness and death.

Chapter 3 focuses on the impact of HIV/AIDS on the productive sectors of the economy: agriculture, including commercial agriculture, industry and the private sector. As always, we try to identify adjustment mechanisms which develop as the epidemic is unfolding. The other half of this chapter attempts to summarise how the conditions for growth are affected in a medium-term perspective (in this context defined as up to 2015), with emphasis on factors related to human capital and demography, productivity and savings and investment.

Chapter 4 discusses the impact of HIV/AIDS on the public sector, covering issues such as effects on government revenue and expenditure and on human resources. Special attention is paid to two key areas of public sector delivery: health and education.

Chapter 5 then presents a tentative analysis of long-term responses and consequences of the disease. Since the long-term impact (i.e. effects occurring after 2015) depends on so many unknowns – e.g. the speed and direction of behavioural changes, norms and attitudes related to sexuality and gender roles, government action and the overall policy framework, the size and effectiveness of international assistance to combat HIV/AIDS, medical advances in the treatment of the disease, the impact on social cohesion and norms of trust and cooperation at the community level and others – this chapter is, by necessity, surrounded by even more uncertainty than the previous ones. For this reason, the analysis will not attempt to provide reliable quantitative estimates of, for example, the impact of HIV/AIDS on Malawi's per capita income by the year 2030; rather, we will limit ourselves to a discussion of various aggravating and mitigating factors which we believe will have a crucial impact on the country's long-term development prospects.

The final chapter is a discussion of policy implications for the Malawi government and other stakeholders, including the international donor community.

1. HIV and AIDS

In Section 1.1 through 1.3, we provide a brief introduction to HIV/AIDS. We describe the salient characteristics of the disease and its spread and prevalence in Sub-Saharan Africa at large and in particular in Malawi. In Section 1.3, we focus on the demographic aspects of HIV/AIDS. Finally, in Section 1.4, we explore the major drivers of the HIV/AIDS epidemic in Malawi.

1.1 The Disease

AIDS (Acquired Immune Deficiency Syndrome) was first detected in 1981. Since then it has become a world-wide epidemic. AIDS is caused by infection with HIV (Human Immunodeficiency Virus), which attacks cells of the body's immune system (so-called CD4 T-cells) and gradually destroys the body's ability to fight infections.⁶ There are two types of HIV: HIV-1 is the primary type of virus and it is distributed world-wide. HIV-1 is driving the greater part of the demographic impact as it has a faster progression from HIV to AIDS and from AIDS to death.⁷ The second type, HIV-2, is largely confined to West Africa (Epstein, 2004).

The period of time that elapses between HIV infection and the onset of full-blown AIDS varies and can be as long as twenty years. However, in sub-Saharan Africa, the duration of the disease without treatment is usually considered to be between seven and ten years, largely due to the poorer average health and nutritional status of the population (Barnett and Whiteside, 2002:168).

The severity of the pandemic is undeniable. In AIDS-related literature it is argued that this is a unique threat to mankind in that its economic impact is greater than that of most prevalent diseases. Some of the reasons given for this include that it is incurable and surrounded by silence and stigma, it is a long-wave crisis with a long incubation period during which the HIV-infection is invisible, and it slowly kills the most productive members of society.

In Africa, AIDS emerged against a backdrop of extreme poverty, hunger, conflict and inadequate infrastructure. These factors combined have increased the spread of the disease in this region of the world, and it is

⁶ A healthy person has 1,200 CD4 cells per micro litre of blood. As HIV progresses, the number falls. When the CD4 cell count is below 200, opportunistic infections begin and a person is said to have AIDS.

⁷ If progression happens rapidly (i.e. the expected period between infection and death is short), the same level of HIV prevalence will produce a higher death rate and a larger demographic impact (UN, 1998).

the one hardest hit by the epidemic, as illustrated in Table 1 below. Although prevalence is stable in most of Sub-Saharan countries, it is still rising in Swaziland. Swaziland has the highest HIV prevalence rate in the world: 38.8 per cent in the age group 15–49. Botswana is found in second place among the countries hardest hit, with a HIV prevalence of 37.3 per cent.

Table 1: Adult (15–49) HIV Prevalence Rates in Sub-Saharan Africa (end of 2003)

Country/Indicator	Adult (15–49) HIV Prevalence rate
Global Total	1.1
Sub-Saharan Africa	7.5
Swaziland	38.8
Botswana	37.3
Lesotho	28.9
South Africa	21.5
Zambia	16.5
Malawi	14.2
Mozambique	12.2
Tanzania	8.8
Rwanda	5.1
Uganda	4.1

Notes: The estimates given are in rounded numbers as of the end of 2003.

Source: UNAIDS, Report on the global AIDS epidemic, 2004.

1.2 HIV/AIDS in Malawi

Malawi is severely affected by HIV/AIDS and registers the eighth highest HIV prevalence in the world. In 2003 the adult prevalence rate was about 14 per cent, and some 760 000 adults were estimated to be living with HIV, as reported in Table 2.⁸

From the time when the first AIDS cases were diagnosed in Malawi in 1985, the epidemic has become a generalised epidemic and has now spread to all segments of the population. Early in the epidemic more men than women were infected. However, as the epidemic matured more women became infected. As illustrated in Table 2, more than half of the total number of infected adults were women in 2003 (i.e. 58%). We can also see that prevalence levels are considerably higher in urban (23%) than in rural areas (12.4%).⁹ However, the absolute number of HIV positive rural dwellers outnumbers urban HIV carriers by roughly two to one. In addition, HIV prevalence in the Southern Region of Malawi (approximately 20%) is about double the level in the Central and Northern Regions (about 10%).

⁸ The HIV prevalence is estimated on surveillance results from antenatal clinics (ANC). However, there are biases in antenatal surveys and the resulting HIV prevalence data. The data from population-based surveys are more trustworthy (provided that the response rate is high), and give a better picture of the spread of the epidemic in the population at large (Epstein, 2004). Nonetheless, such data was not available at the time of the drafting of this study.

⁹ In most countries in sub-Saharan Africa, HIV infection are higher in urban than in rural areas (UNAIDS, 2004: 31). However, the gap between urban and rural HIV prevalence narrowed during the 1990s.

Table 2: Estimates of the HIV/AIDS Epidemic in Malawi in 2003

Indicator	Value
National adult prevalence (15–49) in%	14.4
Number of infected adults (15–49)	760 000
Number of infected adult women	440 000
Urban adult prevalence (15–49) in%	23.0
Rural adult prevalence (15–49) in%	12.4
Total HIV+ population*	900 000

Notes: *Includes both adults and children (0–49). Sources: NAC (2003)

The three predominant modes of HIV transmission in Malawi are heterosexual contact (88% of infections)¹⁰, mother-to-child transmission (as many children receive the infection from their mothers during pregnancy, birth or through breastfeeding), and transfusion with infected blood (NAC, 2004).¹¹

1.2.1 Knowledge about HIV/AIDS

Estimates show that awareness of AIDS in Malawi is nearly universal (DHS, 2000).¹² Of all women and men, about 99 per cent of women and almost 100 per cent of all men had at least ‘heard of AIDS,’ with only very small differences between the various age groups. In addition, the more educated the respondents were (both men and women), the more likely they were to have knowledge about at least two ways to avoid AIDS (DHS, 2000).

In contrast with the DHS results, the knowledge and behaviour indicators by UNAIDS (2004) show that only 34 per cent of women and 42 per cent of men (aged 15–24 years) could identify at least two prevention methods and reject three misconceptions about HIV/AIDS. The large deviation between these two sources of data is probably related to the many misconceptions that exist with regard to HIV/AIDS and condoms in Malawi (e.g., Bisika et al., 2004).¹³ Even so, Malawi, together with Botswana, has the best results on these indicators in sub-Saharan Africa.

Still, the reviewed literature on knowledge and behaviour in Malawi shows that there exist several misconceptions and large gaps in the information that people have on the origins and spread of the disease (Pinder, 2004). This can partly be explained by the sources of information available for learning about HIV/AIDS. In Malawi, verbal communication is a more effective means of communication than the written word. Hence, not surprisingly the main source of information on HIV/AIDS is the radio, followed by friends and health centre personnel. Other important sources include posters, newspapers, village and church meetings, traditional healers and personal observations of HIV-infected people.

¹⁰ The probability of transmitting HIV in a single act of intercourse is low under normal conditions. In addition, the probability of HIV-1 infection per exposure differs between women and men. It is many times higher from a man to a woman than from a woman to a man (Barnett and Whiteside, 2002:38). However, a number of factors dramatically increase the risk of infection. These include multiple partners and the presence of a wound or a STI.

¹¹ Without any preventive measures, 25 to 40% of babies born to infected mothers will themselves be infected.

¹² Results from the final DHS from 2004 are expected to be released in late 2005.

¹³ In Malawi, misconceptions about condoms can be severe. Shah et al. (2002) found that some respondents believed that condoms could kill a woman, while others claimed it could make men impotent.

1.2.2 Views on and Use of Condoms

According to the DHS (2004) data, only five per cent of women and 15 per cent of men who had sex in the past year reported use of a condom during their last sexual intercourse. However, condom use tends to vary considerably between different categories of people. National survey data, for instance, show that condoms are not popular among married couples. Condom use for this category has declined slightly between 1996 and 2000, from four to three per cent for women and from nine to six percent for men. Condom use in sex with non-cohabiting partners, however, increased from 20 to 29 per cent among women and from 38 to 39 per cent among men (MKAPH, 1996; DHS, 2000). An encouraging sign is that condom use with a non-cohabiting partner increased further in the DHS 2004 data to 30% for women and 47% for men.

For a married couple, and sometimes for non-cohabiting partners that have known each other for a long time, the decline in condom use is probably due to the fact that they do not find condoms necessary. However, since many have unprotected sex with other partners both before and after marriage, avoidance of the use of condoms within marriage increases the spread of sexually transmitted infections (STI) and HIV equally as between single men and women (Matinga and McConville, 2003).

Among young women and men (aged 15–24), many know a source of condoms (76 and 88 per cent, respectively), but the percentage that actually uses them is much lower. For instance, only 29 per cent of boys aged 15 to 19 use a condom, compared to 47 per cent of the men aged 20 to 24 (DHS, 2000).¹⁴ That is, even when adolescents have information about where they can get a condom (and mostly they are also free of charge) many still engage in unprotected sex. Results from UNAIDS (2004) knowledge and behaviour indicators also show that a large number of males aged 15–24 years (71%) had ‘high-risk sex’ in the last year (i.e. sex with a non-marital, non-cohabiting partner in the last 12 months).¹⁵ The same indicator for women is much lower (17%), which is a general pattern for sub-Saharan African countries. Moreover, of those who had high-risk sex in the past 12 months aged 15–24, only 38 per cent of men and 32 per cent of women used a condom. Among men reporting having had commercial (paid) sex in the last 12 months, 35 percent reported using a condom on the last occasion. Yet, condom use during commercial sex is relatively high, and this is strongly related to educational attainment (DHS, 2000).¹⁶

What are the main reasons for the gap between knowledge about HIV/AIDS and condom use? The findings from DHS (2000) indicate that most people (76% of women and 84% of men) think that condoms are safe. However, certain population subgroups are more likely to believe that they are not. For instance, less than one-half of the women in the North think condoms are safe to use. Among women, low condom use may also be due to powerlessness to negotiate abstinence or condom use (see Section 1.4.2). Others may not adopt safe behaviour because they perceive their individual risk for HIV infection to be low (this applies to men as well).¹⁷

¹⁴ These numbers do not imply that condoms are used regularly. It implies only that a condom was used on the last occasion.

¹⁵ Proportion of 15–24 year-old respondents who had sex with a non-marital, non-cohabiting partner in the last 12 months, of all respondents reporting sexual activity in the last year (UNAIDS, 2004).

¹⁶ Marital status and drinking patterns were only weakly associated with the use of a condom at the respondent's most recent occurrence of paid sex.

¹⁷ One example is that girls perceived little risk in having sex with a boy whose mother knew their family (UN, 2002).

Another important obstacle for condom use is the various messages with conflicting views on sexual behaviour and the use of condoms, which cause confusion and make it difficult to prevent the spread of HIV. The current messages include religious morality, sexual satisfaction, and social stigma (Kaler, 2004a). The Catholic view, for instance, presents extra-marital sex as socially unacceptable and places religious sanctions against condoms. This is a position counter to the efforts of the government and various donor agencies to popularise the use of condoms.

1.2.3 Testing for HIV

In Malawi the great majority want to be tested for HIV (81% of women and 87% of men) (DHS, 2000). This result is consistent with findings from several studies (e.g., de Graft-Johnson et al., n. d).¹⁸ However, data on the desire to be tested do not necessarily reflect the likelihood of actually taking test.¹⁹ In fact, the DHS (2000) results show that more men (15.2%) than women (8.5%) had been tested. Compared with the most recent DHS (2004), no great differences are found (16% of men and 8% of women). Several factors could explain this apparent gender difference. Fear of male partner reaction (in particular physical and verbal abuse) has been found to be a major deterrent to HIV testing and results notification among women. Another factor is that many women may lack the autonomy to make decisions about seeking health services, and, therefore, do not have access to health care including HIV testing.

The evident and large discrepancy between demand and supply to get an HIV test is also due to the limited availability of and access to voluntary counselling and testing (VCT) services. In mid-2005, 156 towns and cities provided counselling and testing nationwide. Assuming the existing health facilities were evenly distributed, there would have been one health facility per 18 000 population in 2002 (HERA, 2005). Despite these capacity constraints, the number of people tested for HIV each year is increasing rapidly. A report by the Ministry of Health (MoH) and the National AIDS Commission (NAC) (2004–2005) shows that 150 000 people were tested in 2002 and that by 2005 this number is estimated to rise to 450 000.

1.2.4 Antiretroviral Therapy (ART)

There is no vaccine or cure for HIV infection or AIDS. There have, however, been drugs available to fight and prevent opportunistic infections for many years.²⁰ Over the past 10 years, researchers have developed antiretroviral (ARV) drugs to fight the virus. The ARV drug gradually reduces the viral load and improves the CD4-lymphocyte count, helping the immune system to recover and preventing the development of opportunistic infections. ARV must be taken for life to be effective, and patient adherence to the therapy is crucial. If these requirements are fulfilled, ARV can greatly improve both length and quality of life. However, the average duration of that extension remains uncertain. As with any drugs there may be problems with intolerance, side effects, resistance and toxicity.

¹⁸ Note that the desire or demand to be tested includes both those who responded that they have not yet been tested but would like to be tested (unmet demand) and those who have already been tested (met demand).

¹⁹ According to a study by de Graft-Johnson et al., n. d) two thirds of men and three quarters of women preferred to learn their test results with their partners present.

²⁰ Individuals diagnosed with AIDS are likely to get life-threatening diseases called opportunistic infections caused by bacteria, viruses, etc., that are usually harmless to healthy people. For African AIDS patients, TB is the most fatal.

The major breakthrough in treatment came in 1995 when the triple combination of ARV (i.e. three drugs taken together at the same time) called highly active antiretroviral therapy (HAART) was introduced. Because HIV can become resistant, a combination treatment such as HAART is necessary to suppress the virus. HAART has greatly improved the health of those on this treatment. Two main types of ARV drugs are used in clinical practice in Malawi: reverse transcriptase inhibitors and protease inhibitors (Harries, 2004).

There has been significant progress in the scaling-up of ART in Malawi. Currently 60 hospitals or clinics in the government and mission sector provide the drugs. The drugs in these sites are provided free of charge at the MoH and the Christian Hospital Association of Malawi (CHAM) facilities. This is possible due to large contributions primarily from the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). Private sector hospitals and clinics also provide ARV drugs, but at a cost of MK 500 (US\$ 4) per month (MoH, 2005).

Today, 170 000 HIV-positive people in Malawi are in need of ART. In the ideal situation, all 900 000 HIV-positive persons infected would be provided with ART over the next 10 years. However, given the capacity constraints of the health sector, the revised country aim (as of September 2005) is to have over 170 000 patients on ARTs by the end of 2010 (MoH, 2005). Table 3 below shows the estimated number of new patients starting on ARTs per year and the number of patients ever started on ARTs (both in the public and private sectors). The numbers in bold will be funded by the Global Fund, for the years 2006–2008.

Table 3: Estimated Number of New Patients Starting on ARV Per Year and the Cumulative Number of Patients Ever Started on ARV by the End of Each Year in the Public and Private Sectors in Malawi

Year	Number of new patients started on ARV during the year	Number of patients ever started on ARV by the end of the year
2005	20 000	35 000 (22 913)*
2006	35 000	70 000
2007	40 000	110 000
2008	45 000	155 000
2009	45 000	200 000
2010	45 000	245 000

*Note: *The number within parentheses was the number of patients on ARVs by June. This indicates that the target for 2005 is likely to be reached or even surpassed (HERA, 2005).*

Source: MoH, 2005.

The scaling-up on the provision of ART in Malawi has been very successful, but it also has its costs. There are for instance not enough drugs for everyone in need, and many hospitals providing ART are forced to put people on waiting lists to access the treatment. At the Lighthouse, for instance, patients who sought ART in September 2005

had to wait up to three months.²¹ Another issue with regard to the scaling-up is how ART provision will affect the health care system in Malawi. It is possible that more people on ART may lead to reduced pressure on the health facilities, as those that are ill stay healthy longer and require less care (the implications of the expansion of ART are further discussed in Chapter 6).

In terms of equitable access, progress has also been achieved in the expansion of ART provision. By the end of 2004, 60 per cent of the patients who accessed ART were women. Regarding geographical equity, there were substantially more Malawians in the Southern Region on ART than in the North and Central Regions. A longer history of ART provision, a higher prevalence rate and a larger population in the South partly explain these regional differences. Even if there has been progress in equity in access to the drugs, there are indications of constraints to access in rural communities and among children.

1.3 Demographic Impact

In this section, we will take a closer look at the demographic impact of the epidemic by briefly considering the impact on the population structure in Malawi and on a few key demographic indicators including mortality rates, life expectancy at birth, infant and under-five mortality rates, the maternal mortality ratio, and, finally, the total fertility rate.

1.3.1 Demographic Structure of the Population

Despite causing a dramatic death toll, AIDS will not cause a negative population growth in most countries in southern Africa. Population growth will continue to be positive since the high fertility more than outweighs the rise in mortality. In Malawi, AIDS will cause the number of adults in the population to grow more slowly in the coming decades than in a no-AIDS scenario (US Census Bureau, 2002; UN, 2005).

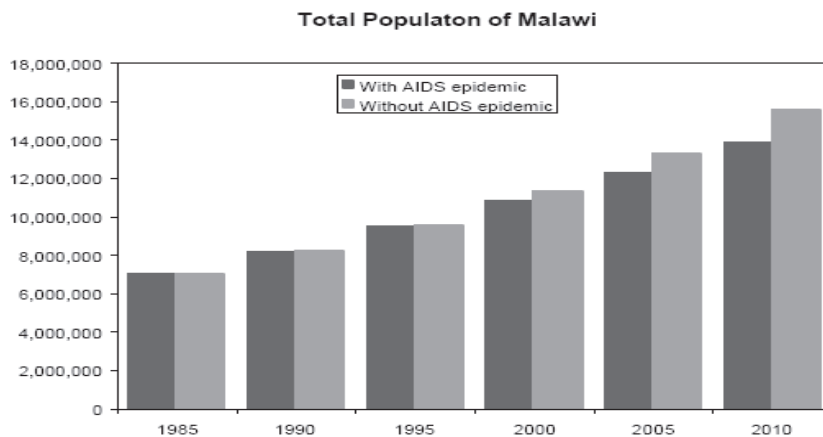
The population projection by the National AIDS Commission (2003) in Figure 1 below illustrates the point just made. This projection assumes that the total fertility rate²² continues to slowly decline from about six births per woman today to 5.4 by 2010. It also assumes that the annual population growth rate will be 2.4 per cent with AIDS, compared to approximately 3.2 per cent without AIDS.²³ Figure 1 further shows that without any AIDS deaths, the population would be almost 16 million in 2010. Because of AIDS, it will only be about 14 million. Likely changes in Malawi dependency ratio in a medium and long-term perspective will be further discussed in Chapters 3 and 6.

²¹ The Lighthouse Trust was established in 2001 in Lilongwe. Today, the Lighthouse is the first specialist centre in Malawi for the care and support of people living with HIV and AIDS (Interview with Dr. Ralf Weigel, 2005 and Phiri et al., 2004).

²² The total fertility rate is the average number of children a woman would bear if fertility rates remained unchanged during her lifetime.

²³ This is the case, except for the most heavily impacted countries of Botswana, Lesotho and Swaziland, where the population is projected to decrease as deaths outnumber births, as well as in a few other countries (e.g. South Africa) where the population growth is expected to be halted.

Figure 1: Population Projection in a Situation With and Without AIDS (1985–2010)

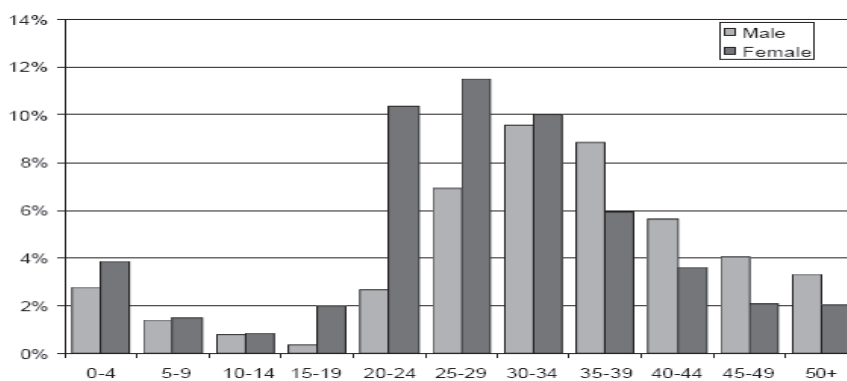


Source: Adapted from NAC (2003).

Moreover, there are considerable variations in the HIV infection rates in the Malawian population between regions, sexes and age groups, as described in Section 1.2. This in turn affects the demographic structure and growth of the population and labour force. Considering the differences between the sexes, for instance, women are now being infected at faster rates than men. Currently 58 per cent of all HIV-infected adults are women, as discussed earlier. This disparity is mainly due to the fact that women have multiple vulnerabilities to HIV transmission (see Section 1.4.2).

Considering the number of AIDS cases, it is evident that even though the total number of reported AIDS cases according to sex is quite equal, the distribution by age group and sex is very different. In Figure 2 below we can see that, of the number of reported AIDS cases, more than four times as many women as men reported having AIDS in the age groups 15–24. This indicates that HIV infects women earlier than men. This sex differential is consistent with the pattern of HIV infection and AIDS-related mortality seen throughout sub-Saharan Africa. One reason for this is due to sexual mixing patterns, whereby older men have sex with young girls in the belief that they are ‘AIDS-free’ (DHS, 2000; NAC, 2004).

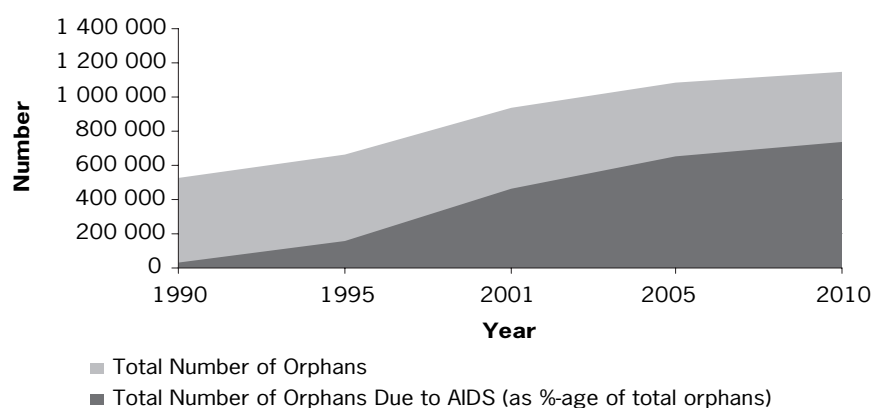
Figure 2: Age and Sex Distribution of Reported AIDS Cases, Malawi in 2003



Source: Adapted from NAC (2004).

One of the most severe consequences of HIV/AIDS is the increasing number of orphans. It is hard to estimate the exact number of AIDS orphans in Malawi.²⁴ However, according to estimates by UNAIDS, about 500 000 children between 0 and 17 years had lost one or both of their parents to AIDS in 2003. What will happen in the future as a result of such large numbers of orphans? Projections show that the number of orphans due to AIDS in the year 2010 will account for 64 per cent of the total number of orphans (741 000 AIDS-orphans). Alternatively expressed, they will make about 12 per cent of the total number of children 0–14 years old (see Figure 3 below).

Figure 3: Predicted Number of Orphans in Malawi (1990–2010)



Note: Orphans in this figure include children between 0–17 years that had lost one or both of their parents in 2003. Source: UNAIDS/UNICEF/USAID, 2002.

1.3.2 Impact of HIV/AIDS on Key Demographic Indicators

Since the first AIDS-cases were diagnosed in 1985, the number of AIDS-related deaths has reached 650 000. DHS (2000) data comparing death rates from the surveys in 1992 and 2000 show that all-cause mortality for women and men (aged 15–49 years) has risen sharply during the 1990s. The increase in mortality, 74 per cent for women and 76 per cent for men, is largely due to AIDS-mortality. This sharp increase is explained by the time lag of about ten years between HIV and death (in the absence of drug therapy). Hence, those who got infected with HIV in the early 1990s are increasing mortality rates today.

On a more positive note, the under-five and infant mortality rates show a declining trend. Over the period 2000–2004, under-five mortality rate was 133 deaths per 1 000 live births, compared with 189 for the period 1996–2000 and 234 during 1988–1992 (DHS, 2000).²⁵ The infant mortality rate was 76 deaths per 1 000 live births (compared with 104 per 1 000 live births in 2000). In the developing world, the reasons for such improvement in child-survival-related factors are typically many and varied. Thus, they are difficult to discern. However, a few factors that could be associated with improved child survival are the progresses made in the provision of clean water to the rural population, malaria

²⁴ There have been disparities in the definitions employed in the studies reviewed. As a result, the number of orphans varies considerably between studies.

²⁵ The infant mortality rate is the number of infants dying before reaching one year of age per 1000 live births and the child mortality ratio is the probability of dying between the age of 0 and 5 per 1000.

control activities, and progress in the education of women (primary caregivers). Although this signifies important progress, it should be kept in mind that child mortality in Malawi still represents one of the worst child mortality rates in Africa.

Another key demographic indicator is the maternal mortality ratio (MMR). Based on latest available estimate in the 2000 DHS survey, the MMR is estimated to be 1 120 maternal deaths per 100 000 live births.²⁶ This ratio exceeds by some 80 per cent the estimate from the 1992 result of 620 maternal deaths per 100 000 live births. However, how much of the MMR estimate that includes mortality related to AIDS is not clear.²⁷

HIV/AIDS also affects total fertility rates (TFR), since fertility tends to be lower for HIV-infected women than for uninfected women. Moreover, as mortality rates are rising, the TFR is expected to decline over time (from 6.1 over the period 2000–2005 to 4.7 in 2015–2020).²⁸ In addition, about one-third of children born to infected mothers are themselves infected and unlikely to reach childbearing age. Thus, AIDS mortality is expected to affect future population growth as the increase in deaths among women in reproductive ages leads to fewer births.²⁹ Over time HIV/AIDS may also reduce birth rates indirectly through its impact on sexual behaviour, such as condom use and reducing the number of sexual partners (Epstein, 2004). The TFR is also impacted by many other factors besides HIV/AIDS, such as access to family planning and increased wages, factors not included in the calculations of the above estimates.

Finally, we consider life expectancy at birth. This indicator measures the average number of years a new-born infant is expected to live if health and living conditions at the time of its birth remained the same throughout its life. By comparing the situation over time, the great impact of HIV/AIDS on life expectancy at birth becomes evident. This demographic indicator has dropped from 45 years in 1990 to 38 years in 2003 (UNAIDS, 2004).

1.4 Drivers of the Epidemic in Malawi

Why is Malawi one of the countries hardest hit by the HIV/AIDS epidemic? In this section we will explore some of the key factors that are driving the HIV epidemic in Malawi. These include: poverty and HIV/AIDS, gender inequality, sexually transmitted infections, mobility, harmful traditional practices and risky behaviours, attitudes towards sex and HIV/AIDS, and stigma discrimination.

1.4.1 Poverty and HIV/AIDS

Malawi is, as emphasised in the introduction, one of the poorest countries in the world. There is a clear link between HIV/AIDS and poverty (often referred to as a two-way link). Although this inter-relationship is complex, it is widely acknowledged that HIV/AIDS leads to poverty and

²⁶ This ratio is calculated as the maternal mortality rate (maternal deaths per 1000 woman-years of exposure) divided by the general fertility rate. It is expressed per 100 000 live births. In contrast with the maternal mortality rate, this ratio emphasises the obstetrical risk of pregnancy and childbearing.

²⁷ Moreover, these data are attached with a number of problems. During the collection of this data, female respondents are, for instance, asked about the total number of their mothers' live births. As yet there is no definitive procedure for establishing the completeness or accuracy of retrospective data on sibling survivorship.

²⁸ Model estimates by the UN (2005) yield these projected fertility paths. They are checked against recent trends in fertility for the analysed country and reflect the situation with AIDS.

²⁹ There is an ongoing debate in the literature of whether HIV/AIDS will lead to lower fertility or not (see e.g., Lorentzen et al. (2005); Kalemli-Ozcan (2005)). See Chapter 3 for more details.

that poverty in turn directly or indirectly creates vulnerability to HIV/AIDS. On the one hand, HIV/AIDS worsens the poverty situation at the individual, household as well as the community and national level. HIV/AIDS exacerbates poverty by killing primarily people in their most productive ages, leading to a premature loss of human capital. On the other hand, people living in poverty are more vulnerable to HIV infection due to a number of factors such as less access to food, HIV information, education, health care services, large gender inequality, and so on. In addition, poor access to food and health leads to poor general health, which increases the risk of HIV infection and leads to a faster progression of AIDS.

1.4.2 Gender Inequality

There are large disparities between the sexes in Malawi. Of the 140 countries ranked on UNDP's (2005) Gender-related development index (GDI)³⁰, Malawi is number 129, with a GDI of 0.396 (the values ranges from 0 to 1, where 1 is the highest gender equality). Women (particularly young women) are disproportionately affected by the epidemic since they have multiple vulnerabilities to HIV transmission, including biological factors as well as cultural, (psycho-) social and economic subordination.³¹ Women with few subsistence options may for instance be forced into high-risk sexual relationships for money or food, and it is common that they have limited influence over the conditions under which sex occurs, including condom use (e.g. BRIDGE, 2004).

Women's vulnerability to HIV/AIDS is further compounded by sexual and Gender Based Violence (GBV), which remains a persistent problem in Malawi (White et al., 2004). GBV leads to physical and psycho-socio consequences such as sexual abuse, which in turn increases the risk for wounds and HIV infection and unwanted pregnancies. According to the DHS (2004), 12 per cent of women have experienced physical violence since the age of 15. Moreover, Matinga and McConville (2003) found that the most deep-rooted belief which increases risks in sexual and reproductive health is that 'being a man' means being dominant and in control, especially in sexual relationships. The Ministry of Gender reported similar findings in 2001.

1.4.3 Sexually Transmitted Infections

STIs are recognized as an independent risk factor for HIV transmission. The risk of sexual transmission of HIV may be increased five to ten times in the presence of a STI. In addition, for people who are infected by HIV, the symptoms of STIs may be more severe, the period of infectivity may be increased and the standard treatments may fail (NAC, 2005).

DHS (2000) reported a very low number of STIs, one per cent among women and two per cent of men. This result suggests underreporting, especially among women. However, when all reports of genital ulcers and sores and STIs are combined into one index, the DHS 2000 survey indicates that 11 per cent of women and eight per cent of men had some type of STI in the last 12 months. This is significant, given the evidence that sores or ulcers may facilitate transmission of HIV, especially if left

³⁰ GDI measures gender inequality by using the un-weighted average of three component indices: life expectancy, education, and income.

³¹ Young women are more prone to infection for biological reasons, as their genital surface areas are larger and less developed and, hence, more exposed to tearing.

untreated, which is often the case in Malawi. These findings are supported by statistics from the Queen Elisabeth Central Hospital, where 50 to 60 per cent of men with STIs had been ineffectively treated elsewhere before seeking their treatment.

According to the DHS (2000), of those reporting an STI (other than HIV/AIDS) in the last 12 months, both sexes were equally likely to have sought some type of treatment or advice (women 61 per cent and men 60 per cent). The most popular sources of treatment for women were traditional healers (32%), while men preferred the treatment at a clinical hospital (28%). With regards to whether a health facility was attended, only a minor difference between the sexes emerged (men 28% and women 22%). The low use of health facilities to seek treatment of reported STIs further indicates that many did not receive adequate treatment.

1.4.4 Mobility

Mobility is a marker of enhanced risk for HIV infection. When single people move or families are split up, the likelihood of engaging in risky sexual practices increases. This mobility brings them in contact with many possible sexual partners, which makes them vulnerable to HIV infection. Highly mobile groups, such as truck drivers and fishermen, are at a high risk for contracting and spreading HIV. In the same way, mobility patterns of smallholder farmers and women travelling to trading centres to sell or buy make them mobile and more at risk.

Highways and borders have also been identified as environments of elevated HIV vulnerability. In a study of the Mulanje district in the Southern Region of Malawi, a factor contributing to the high transmission rate of HIV was the mobility of the population. This included traffic by car, truck or public transport between Mozambique, Mulanje and Blantyre, cross border traffic by foot or bicycle and the mobility of the population within the district as migrant labourers for tea estates, for trade or to seek services. The border area therefore played a particular role within the district in the local economy and the dynamics of the HIV/AIDS epidemic.³² In general, places and activities that result in gatherings are particularly risky with regard to the spread of HIV. Such places include weekly markets and agricultural trading centres, plantations and estates (see further Chapter 3).

1.4.5 Harmful Traditional Practices and Risky Behaviours

In Malawi, HIV/AIDS transmission has been aggravated by harmful cultural traditions, beliefs and sexual practices. These practices are often based on deep-rooted associations between sex, health and illness and continue to influence sexual and reproductive health and health-seeking behaviour. This makes it hard for women and men to protect themselves against HIV (Bryceson et al., 2004; Matinga and McConville, 2003). Some of the most harmful and frequent traditional practices discussed in the literature with regards to the spread of HIV/AIDS include:

- *Dry sex*. This practice implies the use of herbs to dry out the vagina supposedly to increase the man's pleasure during the sex act (NAC and Reproductive Health Unit, 2003). This is an extremely dangerous practice with regard to the spread of HIV infection, especially if someone has a sexual transmitted infection (STI), since it causes a lot of friction, easily leading to bleeding wounds.

³² The border area between Malawi and Mozambique has historically also played a big role for mobility patterns between the two countries. This was particularly the case during the late 1980s when Malawi received about one million Mozambique refugees.

- Traditional healers' use of non-sterile cutting and piercing tools to heal patients, to perform a circumcision, etc. This can damage patients' health or even put their lives at risk since it easily spreads HIV. Another example is the use of sex as a treatment therapy.
- *Chokolo*, or widow inheritance, whereby a woman is 'inherited' by her deceased husband's brother. This practice was originally developed within communities as an informal safety net. However, it is now well known that it spreads HIV/AIDS.³³
- *Fisi* is a man (*hyena*) who has sex with a woman who fails to conceive by another man or with a young girl who has just undergone the puberty phase to unveil her maturity, etc.
- Other risky practices and behaviours include: widow and adolescent sexual cleansing rituals, various initiation ceremonies, multiple sexual partners, lack of condom use, and inconsistent health-seeking behaviour (i.e. many do not treat STI or seek VCT) and young age of first sexual intercourse (e.g., Munthali et al., 2004; Smith and Watkins, 2005).

Currently, many harmful traditional rituals are beginning to be re-evaluated by community chiefs and the population at large. National observations indicate that people are adapting their customs and practices to avoid the spread of HIV/AIDS. Circumcision and other traditional health procedures are, for example, far more likely today to be performed with new razor blades, and traditional sexual rituals are not as frequent (e.g., Bisika et al., 2004; Brycson and Fonseca, 2005).

1.4.6 Discussing Sex and HIV/AIDS

Unwillingness to discuss issues related to sex and HIV/AIDS has frequently been pointed out in previous research as the prevailing norm in the Malawian society. This is partly because sex has been surrounded by a culture of secrecy and silence. Such a culture has led to the reluctance to discuss issues related to HIV/AIDS, since this disease is mainly spread through sexual contact.

In studies by Shah et al. (2002) and Pinder (2004), the researchers found that cultural norms and religious beliefs inhibited some participants from freely discussing issues related to sex and STIs. Some also felt obliged to refer to HIV/AIDS as a 'chronic illness' during the interviews and focus group discussions.³⁴ Moreover, in a study by BRIDGE (2004) covering eight districts in Malawi, it was found that interpersonal discussion about sex and HIV prevention was low, in particular within families and among males as a group.

However, conflicting evidence questioning the view that Malawians in general are reluctant to discuss issues about sex and HIV/AIDS is increasingly found. The results of the DHS (2000), for example, show that most married couples and those living together report that they have never discussed the prevention of HIV/AIDS with their partner (over 70% of women and 80% of men). More recent literature shows that Malawians are much more comfortable discussing sex and HIV/AIDS amongst themselves today than before (e.g., Kaler, 2004b). However, according to Shah (2003), discussing these issues with a peer group and

³³ In Kenya and Uganda, the widespread traditional practice of widow inheritance is no longer mandatory (Rugalema, 1999) and initiatives to stop these practices have been made. This may leave widows in a weak economic position, which can lead to other risky sexual behaviour (discussed in Jayne et al., 2004).

³⁴ The cases of chronic sickness that are referred to in these studies were not clinically tested for HIV/AIDS, but are rather based on a checklist of possible symptoms and diseases associated with HIV/AIDS.

friends is still far from being the prevailing norm in society. Moreover, despite these discussions, there is a lack of consensus about whether it is worthwhile to change behaviour in order to avoid HIV/AIDS. This is because many perceive the epidemic as being something inevitable or because they perceive their risk of getting infected as very small.

1.4.7 Stigmatisation of People Living With HIV/AIDS

Stigma and the discrimination of people living with HIV and AIDS (PLWHA) are widespread in Malawi and fuel the epidemic. The DHS (2000) for instance reveals that only 49 per cent of women and 53 per cent of men think that an HIV-positive individual should keep their right to work. The fact that there is no cure for HIV/AIDS contributes to stigma and fear and limits people's ability and willingness to seek VCT, proper treatment, and support. It may also exclude AIDS-affected families from community meetings.³⁵ Denial and silence about HIV/AIDS are other aspects that have increased the stigma (MANET, 2003; Frankenberger et al., 2003).³⁶

Currently, there are few incentives to openly disclose one's HIV status in the Malawian society because of perceived and real threats of stigma and discrimination. It is, for instance, not uncommon for those with access to information regarding others' sero-status to reveal this information, failing to respect people's right to privacy and confidentiality. Despite the fact that the stigma of HIV/AIDS is severe, it is reasonable to believe that it will be less so in coming years. This is because an increasing number of people decide to test their status, extensive knowledge about HIV/AIDS and ways to protect oneself from infection has spread in the country, and there is an increasing access to ARV treatment.

1.5 Conclusion and Discussion

We conclude this chapter with a brief discussion of the question on everybody's lips: do the messages and information about HIV/AIDS have any effect on changing behaviours?

Currently, the answer to this question varies greatly depending on who is providing the answers. In a recent study by Bryceson et al. (2004), the interviewed residents of three villages felt that sexual relations had not been altered in connection with publicised measures to prevent the spread of HIV. In a study in ten villages in central Malawi by Shah (2003) by contrast, both men and women reported that they had taken measures to protect themselves against HIV/AIDS. The most frequently quoted measure was to stay with one partner and to discuss HIV/AIDS with their partner. The DHS (2000) results show that on the national level the three most frequently reported means employed to prevent HIV/AIDS was abstinence, condom use, and limiting the number of sexual partners.

These conflicting findings indicate that attitudes in the Malawian society are currently undergoing significant transformation. They also indicate that behavioural changes have started to take place, but at different speeds and degrees in different places. Anecdotal evidence, for instance, suggests that remote rural areas are more traditional and more

³⁵ In the beginning of the HIV/AIDS epidemic, a number of powerful metaphors were mobilized around the disease that served to reinforce and legitimise stigmatisation. These include AIDS as death; AIDS as horror (in which infected people are demonised and feared) and AIDS as punishment (e.g., for immoral behaviour, among others). These metaphors have constructed a powerful basis for stigmatising and discriminatory responses (MANET, 2003).

³⁶ Other examples of stigma mentioned by PLWHA include abuse from health care professional and traditional healers who may demand monetary and other material favours (MANET, 2003).

rigid regarding behavioural changes. This phenomenon seems likely, given that these areas are the hardest ones to reach with preventive HIV/AIDS messages. In addition, encouraging signs of behavioural change undoubtedly already exist. Examples include villagers who avoid cultural practices known to increase the spread of HIV, increased openness when it comes to discussing issues about sexuality and HIV/AIDS, widespread knowledge about HIV/AIDS, a strong demand for VCT, and a slight increase in condom use.

However, one should not forget that there are still a number of discouraging signs. They include the fact that the median age at which women have sex for the first time has been declining, stigma and discrimination of PLWHA prevail, and many misconceptions about HIV/AIDS and condoms still exist. In addition, the role of unprotected sex with multiple and casual partners in the spread of HIV needs to be better understood and accepted as harmful practice. That is, while safety measures to reduce the further spread of the epidemic have been taken by some, the main factor behind the rapid spread of HIV in Malawi is that many people continue to have multiple sex partners. Another behaviour identified as particularly risky with regard to HIV transmission is the practice of dry sex, which is closely connected to the large gender disparities that remain a persistent problem in Malawi. In sum, particular attention must be paid to these negatives in order not to lose the progress already made. More information and analysis about behavioural change and other complex issues will be presented in subsequent chapters.

2. Impact of HIV/AIDS on Livelihoods

In this chapter, we discuss the impact of HIV/AIDS on individuals, households and communities, as well as the strategies they use to cope with the epidemic.³⁷ For these units the impact of HIV/AIDS is particularly strongly felt because they shoulder the dual burden of emotional suffering and increased economic costs.

There are several categories of costs associated with the HIV/AIDS epidemic. The costs are both direct and indirect. The direct costs are primarily out of pocket expenditure, such as medical and funeral expenses. Indirect costs include loss of income and labour as a consequence of prime-age mortality or by those who give up jobs to nurse the sick.

Sections 2.1 and 2.2 describe direct and indirect costs of the epidemic. Subsequently, in Sections 2.3 and 2.4, coping mechanisms developed as a response to the impacts of the epidemic are analysed. In Section 2.5 we consider the effects of HIV/AIDS in the urban, non-farm informal sector. Conclusions and a discussion are provided in the final section.

2.1 Direct Costs of HIV/AIDS

2.1.1 Medical Expenditures

When planning for policy interventions, it is vital to have information on how large a share of the household budget that is assigned to medical expenditure in a HIV/AIDS-affected household. Unfortunately, this is not easy to assess in the case of Malawi, due to the paucity of data and, in cases when data exist, due to difficulties in comparing the results across studies because of different methodologies.

For those affected by HIV/AIDS-related illness, it is clear that medical expenditure and transport costs make up a large share of the household budget. According to Martin-Staple (2004), Malawian households pay a large share of the health bill, i.e. 26 per cent in 1998/1999. The National health account from 2001 showed that the average individual (not household) health care expenditure (in prices of March 2000) was US\$ 3.7. This cost is expected to be substantially higher for HIV/AIDS-affected households, primarily due to two reasons: the longer duration of

³⁷ In this chapter, the community level analysis is not extensively developed due to lack of data.

illness associated with this disease and because the HIV/AIDS infection tends to cluster in affected households.³⁸

Since we have not been able to find information about health care spending on the household level separated into HIV/AIDS-affected and non-affected households in Malawi, we draw on evidence from rural Tanzania by Ngalua et al. (2002). This study looked at health seeking behaviour and expenditure by those who have lost an adult family member. It confirmed that health care spending on average is higher for a HIV/AIDS-affected household, largely because of the longer duration of illness. The mean direct health costs in households experiencing an AIDS death accounted for US\$ 70 dollars, which represented about 24 per cent of the total per capita income. The same large expenditure pattern is observable in other countries. In Zambian households, for instance, the out-of-pocket spending for HIV/AIDS was 29 per cent of the total household budget (National health account, 2002).³⁹

We do not have information on the amount of payment that households in Malawi spend on traditional medicine, perhaps since this service is not always paid for in money (GoM, 2003).⁴⁰ However, according to literature from other African countries, medical costs incurred by AIDS-afflicted households are often expenses paid for traditional forms of medicine (FAO, 2004). In Burkina Faso, for example, the households contributed with 14 per cent of the total expenditure on AIDS in 2003. Of this in turn 70 per cent was used for traditional healers.

2.1.2 Funeral Expenses

Funeral expenses represent a heavy burden for the majority of low-income households. This cost is largely borne by rural communities, since it is common for HIV-infected urban dwellers of rural origin to return to their communities when they fall ill. The costs for funerals are both direct expenditures (to pay for a coffin, cloth, funeral ceremony, etc.) and indirect costs, such as lost labour time (Bota et al., 2001). At the funeral, the guests are also offered food, which often requires sacrificing valuable livestock. Absenteeism from work to attend a funeral also leads to substantial costs. This is because a funeral can last from a few hours to several days, and there may be several funerals per week due to the large number of deaths caused by AIDS.

While there is no information on average household expenditures on funerals in Malawi, the estimated cost borne by the public sector for funerals of a junior or middle-income officer, K45 720, (US\$ 714 in 2002 current prices) can serve as a reference (see Table 4). Funeral costs are even higher for senior officers.⁴¹ Another benchmark is the amount of the household budget spent on one funeral in Tanzania by the households experiencing an AIDS death. This amounted to a mean value of US\$ 34 dollars (in prices as of 2002) (i.e. about 11 per cent of the annual household budget) (Ngalula et al., 2002).

³⁸ Similar to the study by Shah et al. (2002), the definition of 'affected households' in this report includes those who spend time and other resources taking care of the sick, and bear the burden of increased expenses.

³⁹ It should be noted that even if HIV/AIDS aggravates these inequalities between various income groups, they are also due to inequalities within the national health system. Read more about this in Chapter 4.

⁴⁰ As discussed in Chapter 1 in relation to the treatment of STIs, traditional healers are often preferred as health providers by villagers over health clinics. This was especially true for women.

⁴¹ Funeral costs for most teachers and lower to middle management staff were estimated to fall between MK 12 000 and MK 30 000 per funeral (i.e. between US\$ 187–468). Transportation costs accounted for the main part of the difference (UNDP/GoM, 2002).

Table 4: Estimated Funeral Costs in the Public Sector in Malawi

Coffin	MK 10 000
3 Wreaths	MK 1800
Transport	MK 30 000
Per diem (2 nights) (Driver and welfare worker)	MK 3920
Total	MK 45 720

Costs are in Malawi Kwacha, with an average rate calculated as of 2002, i.e. 1 Kwacha= 0.014 US\$. Source: UNDP/GoM, 2002.

In conclusion, the rapid increase in the number of ill adults as a result of HIV/AIDS raises the direct costs associated with the disease. Those costs consist primarily of funerals, transportation and medical costs. This in turn leads to an increased strain on the available household resources.⁴² In this way, HIV/AIDS has the potential to either damage or entirely deplete available household funds, kept aside for fertilisers or seeds. Increasing medical and transport expenses caused by HIV/AIDS-related illness may instead consume household funds.

2.2 Indirect Costs of HIV/AIDS

A commonly held view in the literature is that AIDS-related mortality results in severe labour constraints, increased poverty rates, and land scarcity among affected households, which ultimately affect agricultural production (e.g., IFPRI, 2005). In Sections 2.2.1 to 2.2.3 below, we assess whether this seems to be a valid assumption in the Malawi case. We do this by first focusing on labour supply effects, with particular focus on women's labour time and the impact on land. Thereafter, we analyse the cost of HIV/AIDS on smallholder agricultural production. In the final section, Section 2.2.4, we focus on the costs of the increasing number of children orphaned by HIV/AIDS.

2.2.1 Impact of HIV/AIDS on Labour Supply

One of the major indirect costs of HIV/AIDS is the loss of labour within the household. This is often the starting point for several other constraints. In a study by Shah et al. (2002), the authors observed that over 70 per cent of the households affected by chronic disease experienced loss of labour. AIDS-related mortality and the loss of one or several key workers in the affected household may lead to remaining family members being unable to maintain the level of agricultural production. The loss of labour also leads to problematic livelihood decisions by AIDS-affected households, such as delaying agricultural operations, finding other income generating activities, etc.

Recent research by Mather et al (2004) suggests that the cost to the affected household of losing a prime-age adult might not be as high as expected by previous research. It also questions the assumption made above that the typical affected household faces more severe labour constraints in agriculture than non-affected households.⁴³ For their

⁴² Despite the draining impact of transportation costs on the household economy, this cost has not been widely elaborated upon in this study due to paucity of data.

⁴³ In this paper, the authors refer to affected households as those households directly and immediately affected by death due to illness. There is also evidence that many of these deaths are HIV-related.

analysis, they use the number of prime-age adults after death as an indicator of available household labour and a thirteen-year panel survey (1990 and 2002). Their results are illustrated in Table 5 below, which shows that the average affected household (middle column) has as many prime-age adults after death as non-affected households (i.e. about five people in the household).⁴⁴ This result is partly explained by the affected households being found on average to have more prime-age adults and a larger household size prior to the death of a prime-age adult in 1990 (5.7 persons) relative to non-affected households (5.2 persons). Another factor is also the long time period over which these effects have been analysed.⁴⁵

Table 5: Before and After Demographic Characteristics of Rural Households With or Without a Prime-Age Adult Death in Malawi

Household Characteristics (mean values)	Non-affected Households Without Death in the house- hold	Affected Households With a Prime- Age Adult Death in 2002**	Affected Households With a Head/ Spouse Death in 2002
<i>1990 – before death*</i>			
Household Size (people)	5.0	5.7	5.1
No. of Prime-Age Adults (people)	2.3	2.8	2.7
<i>2002 – after death</i>			
Household Size (people)	5.5	5.2	4.5
No. of Prime-Age Adults (people)	2.7	2.7	2.5

Notes: *Before death refers to the situation in 1990 for the “affected households” before they had experienced a prime-age adult death. After death refers to the situation in 2002, after the affected households had experienced a prime-age adult death.

**This marks the average affected household that experienced a prime-age adult death in 2002.

Source: Mather et al. (2004).

However, even if the various household types have about the same number of people in the household, this does not mean that the situation is not severe for the affected households. Rather, this implies that the household’s ability to cope with the loss of labour should also be considered. That is, if the household secures other labour, i.e. from relatives, neighbours or child labour, then the affected household does not necessarily undergo more severe labour constraints in agriculture than non-affected households do. For example, it is common to have many children and to let them work in the smallholder household to fill up the loss of a prime-age adult death.

Moreover, given the gender division of labour and knowledge, a surviving parent may not be able to pass the skills of the deceased parent on to their children. This process, similar to the loss of institutional memory in companies, is particularly important to the farm-household

⁴⁴ In this study, prime-age is defined as adults between 15–49 years. Mather et al. use the term ‘prime-age’ to indicate that this is the most important period for labour and sexual activity, during which infection by HIV is most probable.

⁴⁵ A potential source of selection bias in all household surveys is household dissolution due to a prime-age death. That is, if a household selected by the sampling procedure suffered a prime-age adult death and thereafter dissolved prior to 2002, then that household could not be selected.

with its series of tasks requiring specific knowledge, such as selecting good seeds. This development is likely to impact negatively on agricultural production as well as the quality of land as child labour is increasingly used in production. Furthermore, it highlights the importance of education and skill development. The gender aspect of an adult death is also illustrated by SADC (2003) in Malawi with regards to area of land planted. The results show that households with a recent adult male death have 32 per cent less area planted than households with a recent adult female death.

The effects of a death of a prime-age adult are larger on households that are relatively poor prior to the death. The effects may also lead to the impoverishment of a household, frequently caused by HIV/AIDS. Several empirical studies on the impact of prime-age adult mortality on agricultural production and incomes, both in Malawi as well as in other countries in sub-Saharan Africa, have also shown this. Better off households, with food and other reserves, are frequently found to be better positioned to hire casual labour and to endure the morbidity or death than their counterparts (Drimie, 2002; Yamano and Jayne, 2004; Math-er et al., 2004).

The study by SADC (2003) further examined the effects of four HIV/AIDS-proxies on household income in Malawi, Zambia and Zimbabwe.⁴⁶ Their results indicated that a household with a chronically ill active adult received less income (measured in income per capita) than households without chronically ill adults. They also showed that both the number of chronically ill household members and the timing of HIV/AIDS (e.g. during the harvesting period, when no hands can be spared in agriculture) were important factors in impoverishment. In conjunction, these results showed that HIV/AIDS-affected households have a less stable income than non-affected households.

2.2.2 Impact on Women's Labour Time

In addition to losing the labour of the person who is sick or has died, economic losses are imposed on households by those held back from work or not able to reach their normal productive levels. This can occur when taking the patient to the doctor and the hospital or obtaining medicines and other items for the patient. This is especially true for women in the whole of sub-Saharan Africa who have to allocate their labour time both between domestic activities and agricultural production.

Ngwira et al. (2003) argue that since women in the rural areas in Malawi are usually responsible both for cultivating food crops and household tasks, they work between 15–17 hours per day. This is substantially more than the eight hours that men are assumed to work in this study. In addition, national statistics show that females are engaged in subsistence farming (94%) to a much larger extent than men (76.8%) (NSO, 1998). This is in line with a household study from Zambia which shows that 48 per cent of women's time was spent on agriculture and the remainder on household duties (Blackden, 2003).

In relation to these findings, it is interesting to explore how women allocate their time and in particular how HIV/AIDS affects this time allocation. A recent survey conducted by the Afrobarometer in 2004 (across fifteen countries in East and Southern Africa) found that four in

⁴⁶ The HIV/AIDS proxy variables used in this analysis fell into four categories: morbidity variables (e.g., chronically ill household head), mortality variables, hybrid proxy variables (i.e. a combination of mortality and/or morbidity) and demographic variables.

ten Malawians (43 per cent) spend more than five hours a day caring for sick household members, as do 30 per cent of Zambians. Differences between areas of residence were also found, and rural people were more likely to bear the burden of illness and care for sick household members. This is not surprising given that many urban-based individuals return to their rural birthplace during the chronic phase of AIDS, as already mentioned. Even if this assessment did not separate the effect according to gender, it is very probable that these measures show the time women devote to various household activities, largely the women's domain in Malawi (as described above (Afrobarometer, 2004)).

The Afrobarometer also makes assessments of the time spent by households caring for orphans. These results show that between one-quarter and one-fifth of Malawians (25%) and Zambians (23%) spend more than five hours a day caring for orphans. Since it is not very probable that these burdens are covered by public sector support in these countries, it is suggested that these levels may instead reflect social networks such as the extended family system. Thus, in Malawi, these networks seem to absorb much of the impact of the epidemic. Moreover, in the three countries Malawi, Zambia and Mozambique, a higher proportion of female-headed households were found to care for orphans than male-headed households. This gender difference was most pronounced in Malawi, where nearly 40 per cent of female-headed households cared for orphans, compared to 21 per cent of the male-headed households (SADC, 2003).

Hence, not only are women more susceptible to HIV/AIDS infection, but also the impact of HIV/AIDS is highly genderized, to the disadvantage of women. The fact that women assume most of the care-giving responsibility has the potential of adversely impacting on women's participation in the labour market. Nevertheless, in spite of all this, it should be noted that the long-term impact of HIV/AIDS on women's lot is still uncertain. It could lead to empowerment due to coping mechanisms and changes in attitudes. For example, shortages of men could also potentially facilitate women's entrance to the labour market and access to leading positions.

2.2.3 Impact of HIV/AIDS on Land Holdings

One of the indirect costs of HIV/AIDS is that it has the potential to negatively impact on the quality (due to less time and fewer resources to work the land) and quantity of land held by those affected, as well as on the ability of those affected to access and retain land.⁴⁷ Moreover, in Malawi, rights and access to land are interwoven with issues related to gender and inheritance systems as well as with HIV/AIDS.

In Malawi's Land Act (1965), three tenure systems are recognised: customary, freehold and leasehold. Customary land accounts for 70 to 80 per cent of the total land. It is also the main resource for household livelihood and food security in rural areas, and will therefore be our primary focus. The inheritance systems operating in Malawi have significant bearing on the ability to access and retain customary land. This is particularly true for poor and vulnerable groups in the communities, such as widows/ers, divorced women, youths and orphans (Mbaya, 2002; FAO, 2004). The inheritance of customary land is not

⁴⁷ It should be noted here that land distribution in Malawi is unequal. Particularly the poor are constrained in terms of land. About 81% of the poorest 10% of the households have landholdings of less than 0.5 hectare. In contrast, 64% of the richest 10% cultivate more than 1 hectare (GoM, 2000; NSO, 1998).

catered for under statutory law and was traditionally allocated by chiefs. However, this is no longer automatically the case, since family heads have increasingly taken over the allocation role. This tendency in turn threatens the security of tenure and livelihoods for residents on customary land, who may be subject to ad hoc procedures of land allocation. Such processes have also led to an increasing number of land disputes over land allocation. Women and orphans are likely to be particularly disadvantaged in this process and under the prevailing inheritance patterns, for reasons that will be made obvious below. This also creates opportunities for increased access to land for the relatively better off (Mbaya, 2002).⁴⁸ Moreover, a large number of households are experiencing diminishing holding sizes as a result of reallocation of land to relatives and children. However, it is not yet possible to say whether this is affected by the epidemic.

Malawi has two customary systems of marriage and inheritance, the matrilineal and the patrilineal systems. Patrilineal systems are mostly practiced in the Northern Region of Malawi and in the far south, while matrilineal systems are more common in central and southern Malawi (Shah et al., 2002). According to the traditional patrilineal systems of inheritance (both rural and urban-based), widows are not guaranteed continued access to the land holdings that they had prior to the death of their spouse. Rather, the widows are expected to move to their maternal home following the death of their husband. However, recently this traditional system has been challenged, leading to land disputes. Thus, under the patrilineal system, widowed or divorced women may be vulnerable because their access to land is through their husbands. The death of the husband may even result in dissolving and/or relocating the household (Gillespie and Kadiyala, 2005; Ngwira, 2001). According to Barnett et al. (2004), in an advent of an increasing number of adult deaths due to HIV/AIDS, women in many cases lose the direct access to land and the possibility to convert the land to other forms of productive capital.⁴⁹

Under matrilineal systems women are in general in a better position compared with patrilineal systems, as they can call upon their relatives living close-by for assistance. If a woman is widowed, she and her children continue to live in the marital home and have access to the land. However, despite the name of this system, men are the primary decision-makers and a woman's maternal uncle decides how land is distributed. Moreover, similar to the patrilineal system, a widower in a matrilineal system should according to tradition return to his birth place following the death of his wife, while their children stay with the wife's family.

Nonetheless, indirect costs and effects of HIV/AIDS on land use patterns may also manifest themselves differently depending on the situation. On the one hand, in areas of high land pressure, members of extended families may be forced to share the same piece of land, which affects their ability to make productive use of the landholdings. This also forces some household members to seek other income sources, such as ganyu labour. This is generally the case in parts of southern Malawi,

⁴⁸ The Wills and Inheritance Act does not reflect the changed realities due to AIDS deaths and the ascendance of nuclear families (Ngwira et al., 2001; Laws of Malawi, chapter 10:02, 1994). Nor does the Act mention gender, which may undermine women's legal rights to land.

⁴⁹ In addition to the fact that women face access constraints to land, they may also lose access to other resources when their husbands die. For instance, due to cultural norms, agricultural extension workers are hesitant to visit female farmers in the absence of male relatives (Ngwira et al. 2003). Widows may also lose access to judiciary and financial services because of gender-imposed constraints that inhibit a woman from doing certain things (Barnett et al. 2004). Together, these constraints undermine female economic security and enterprise. Another study concludes that widows in Malawi are ten times more likely to experience property dispossession than widowers (Ngwira et al., 2003).

where there is a high population density and the labour to land ratio is high, or alternatively, average landholding per household is small. Under these conditions, other people can substitute for the prolonged illness of one or several members of a household. Accordingly, a prime-age adult death has little effect on the total land use. On the other hand, in areas where the land to labour ratio is low, the effects of long illness associated with HIV/AIDS on land use are more apparent and may affect the quality of land, as households, for instance, increasingly rely on child labour as discussed above in Section 2.2.1.

It has been suggested that effective land rental markets might enhance the welfare of AIDS-affected households by maintaining their asset base and generating a new income source while others make productive use of the land (Jayne et al., 2004). Hopefully the new Land Act currently being drafted by the Malawi Government will be able to achieve this goal. This Act will among other things provide a new legal framework for land reforms and the administration of land matters that will hopefully formalise the security of tenure of customary land (Chirwa, 2004).⁵⁰

2.2.4 Effects of HIV/AIDS on Smallholder Agricultural Production

The effects of HIV/AIDS are likely to be substantial for smallholder agriculture in Malawi, since the majority of the population live in rural areas and rely on this livelihood source.

By way of illustration, Shah et al. (2002) show that as much as 93 per cent of the category of very poor households affected by chronic illness experienced a decrease in crop yields.⁵¹ Moreover, Mather et al. (2004) examined how a prime-age adult death impacted the agricultural production of affected households compared to non-affected households by measuring mean crop income differences across five countries. They found that mean crop incomes are lower for affected than for non-affected households across four of the investigated countries (the exception is Zambia).⁵² However, a decrease in agricultural production is not caused by chronic illness alone. Other important factors are the lack of farm inputs and/or the inability to purchase them, as well as unfavourable weather conditions over the past years.

Households affected by chronic disease may also experience a decrease in agricultural productivity. According to Shah et al. (2002), the proportion of households experiencing a decrease in agricultural productivity was greatest among those affected by chronic disease, i.e. 72 per cent, compared to 56 per cent among households affected by other illnesses and 59 per cent of those not affected by any major illness.

In addition, the rural households badly affected by HIV/AIDS and consequently not able to make fully productive use of their land also tend to be food-insecure (Mbaya, 2002). In a study by Pinder (2004), it was found that 41 per cent of rural smallholder households in Malawi are food-insecure, with 30 per cent of these being female-headed.⁵³ In general, the burden of food insecurity falls very hard on women. This group is often labour constrained, due to their double burden of agricultural

⁵⁰ Bosworth (1998) found that three per cent of households (some 75 000 households) have no land for cultivation.

⁵¹ Given that the researchers of this study felt there was a high sensitivity associated with HIV/AIDS and a reluctance on the part of the villagers to discuss it, they did not mention the term HIV/AIDS during the fieldwork. Rather, they used the term 'chronic sicknesses'.

⁵² The countries included in the study were Kenya, Malawi, Mozambique, Rwanda and Zambia.

⁵³ The implication of HIV/AIDS for food security of affected households is considerable and is recognised as one of the main impacts of HIV/AIDS by a growing body of literature (e.g., Gillespie and Kadiyala, 2005).

and home-related duties, e.g., collecting firewood, water, preparing food, pregnancies, etc., as already discussed in Section 2.2.2.

In sum, the findings in this section indicate that HIV/AIDS-affected households experience a decline in agricultural production as compared to non-affected households. As a consequence, they tend to be less food secure. Food insecurity in turn worsens nutrition and increases the vulnerability to infections, which speeds the progression of HIV infection to AIDS.

2.2.5 Children Orphaned by HIV/AIDS

The increasing number of orphans is described as one of the worst consequences of the AIDS epidemic in many African countries (e.g., Barnett and Whiteside, 2002:177; ILO/UNAIDS, 2002).⁵⁴ Undeniably, there is also a growing concern in villages across Malawi about the number of orphans. Orphans impose a heavy burden and increased financial costs for basic needs such as food, clothing and schooling. Frequently, the extended family, particularly grandmothers and young women, face the indirect costs of supporting and caring for orphaned dependents, as pointed out in Section 2.2.2.

In Malawi, the proportion of orphans does not differ much by gender (females 51 per cent and males 49 per cent). The mean age is about nine years for both sexes. Overall, the results show that the Southern Region has the highest proportion of orphans. Moreover, the proportion of orphans in rural areas is higher than in urban areas. However, the number of orphans in the urban areas increases rapidly after they reach the age of 13. This finding suggests that orphans aged ten and younger are concentrated in the rural areas. Then, around the time of the death of the parent and the loss of economic support, there is an increased rural to urban migration as children try to find employment in urban areas (Doctor, 2004).

Orphans are likely to be particularly susceptible to HIV, be more malnourished, and have larger difficulties accessing land and loans than non-orphans. Their status also confers an added risk for abuse (Mbaya, 2002). In addition, orphans may have unmet psychosocial needs after a parent's death. For the children orphaned by HIV/AIDS, the situation is often worse, with a smaller quantity of assets to draw from since those assets have frequently been depleted during their parent's illness.

Summing up, the indirect costs of the epidemic for affected households in general lead to increased labour constraints and intergenerational losses of knowledge transfer, which also tend to have a strong gender dimension. HIV/AIDS may also result in impoverishment and larger inequalities in the ownership of land and other assets, greater decline in agricultural production, and more strain from food anxiety than for non-affected households.

We also described that the impact of HIV/AIDS has the potential to lead to increased inequalities primarily for women after the death of a spouse. For others, in contrast, opportunities for an increased admission to land are created by ad hoc land allocation or inheritance system procedures. Besides, the impact of HIV/AIDS on land issues also tends to differ significantly across the country due to variations in land to labour ratios. It is also reported that there is an increasing concern in the villages about the increasing number of orphans caused by the epidemic and that a lot of women's time is devoted to taking care of them.

⁵⁴ The definition of an orphan by the Government of Malawi is a child who has lost one or both parents because of death and is under the age of 18 years (Republic of Malawi, 2005).

2.3 Responding to the Direct Costs of HIV/AIDS

In rural Malawi, a number of strategies aimed at supplementing income or simply maintaining household expenditure levels in the advent of HIV/AIDS-related prime-age adult death have been developed. Some of the most common coping strategies to deal with the direct costs of the epidemic will be presented below.⁵⁵

2.3.1 Relying on Ganyu Labour

When a household suffers HIV/AIDS-related labour losses or illnesses, productive activities may be dropped and households start to depend on new sources of livelihood, such as ganyu, or casual wage labour. Ganyu labour is by and large a product of the Malawian countryside where cash earnings for peasant farmers are needed but hard to obtain. Yet, it takes place both within agriculture and in the form of non-agricultural work (Bryceson et al., 2004). Ganyu is an important source of livelihood for many households and a way to supplement income. However, it is often poorly paid in cash or in kind (e.g., in food). Some studies even claim that this is the main source of income for the majority of poor households (e.g., Chiwona-Karltun et al., 2005).

Ganyu has been the main form of inter-household labour exchange between peasant households through much of the 20th century. Ganyu is particularly important for the poorer households and during periods of seasonal stress. It is mainly the poorer households that delay working on their fields, while the better-off hire ganyu labourers for agricultural operations (Shah et al., 2004). As a consequence, ganyu labour has gained a negative connotation associated with deepening impoverishment.

Once households start to depend on ganyu, it is difficult to stop. When working on others' land, they are unable to work their own fields. This reduces crop yields and makes them even more dependent upon seeking ganyu to meet future needs. Reliance on payment in kind for ganyu also implies that sufficient money cannot be raised to buy fertilisers to produce a surplus crop or to repay loans. This often leads to a downward spiral of further ganyu or that the ganyu worker's crops are handed over to the creditor. This situation is referred to as the 'ganyu trap' (Shah, 2002).

The results in the study by Shah et al. (2002) showed that about 26 per cent of the total sample households depended on ganyu for more than four months a year. Amongst the very poor households, about 55 per cent were dependent on ganyu for more than four months per year. Women made up a larger percentage than men in this group. Of the very poor households affected by chronic illness, only 20 per cent experienced a further increased dependence on ganyu. The low number among the chronically ill households might be due to the fact that they do not have any labour to set aside for ganyu.

Ironically, increased reliance upon ganyu may also increase susceptibility to HIV/AIDS infection. This is largely explained by economic conditions on the local labour market. That is, ganyu labour opportunities are hard to come by during the off-peak agricultural season. This may lead to high-risk behaviours, which increase the likelihood of being infected with HIV. Women's transactional sex is, for example, an expanding area of ganyu labour. The primary driving force for this activity

⁵⁵ In the literature there is an ongoing debate over whether it should be said that households 'cope'. According to some researchers, this takes attention from the hardships experienced by households and also tends to shift the responsibility over to the households and avoid public responsibility for helping affected households.

is of course the money that it generates (White et al., 2004; Shah, 2002; GoM 2001a).⁵⁶

2.3.2 Selling Assets

Sales or liquidation of assets is a frequent coping mechanism used in response to adult morbidity and mortality. According to IFPRI (2002), HIV/AIDS is the greatest cause of households' asset depletion, as it strips away all forms of assets (both productive and non-productive assets). Sales of assets (i.e. dissavings) take place when households are faced with economic problems, need to raise money to meet food or medical expenses, to pay off debts, etc. Shah (2003) found that about 40 per cent of the surveyed households affected by chronic illness sold a portion of their assets to buy food or to pay medical or funeral expenses. However, the available estimates vary considerably in the literature.

Items typically sold include both productive and non-productive assets, such as livestock, radios and bicycles, which are the only form of savings that most of the poorer households possess.⁵⁷ A study of five villages in Malawi concluded that rural households are losing (or have lost) most of their assets largely because of the impact of HIV/AIDS (Pinder, 2004). These results are supported by other country studies from the African region. For instance, Menon et al. (1998) show that the divestment of durable assets is higher among households with a HIV/AIDS-related death than other households.⁵⁸ However, in general, capital assets lost by afflicted households are usually re-distributed within the rural economy rather than lost entirely (FAO, 2004).

By selling off assets, households are able to mitigate the short-term effects of adult mortality and other shocks. However, in the medium to long-term, using asset depletion as a coping strategy can lead to negative consequences, such as increasing a household's vulnerability to income shocks and/or decreasing a household's use of cash inputs in crop cultivation. The final result can be being lowered productivity and overall crop production (Mather et al., 2004). Another concern with this coping mechanism is that forced sales of assets to raise financial capital for the households tend to bring in paltry prices.

An important example of asset depletion is the sales of productive assets such as livestock, a common coping strategy for households all over sub-Saharan Africa. This strategy does not result in increased poverty if it is done moderately. However, at some point a household's level of livestock holdings is no longer sustainable. In such situations, which are more likely to occur in a HIV/AIDS-affected household than in other households, this coping strategy is perhaps best described as erosive. Moreover, it is likely the AIDS epidemic is resulting in a concentration in the ownership of cattle assets, as afflicted households sell off assets to those with the resources to accumulate them (FAO, 2004; Jayne et al., 2004). The findings of Mbizule (2004) support this view; vulnerable groups (e.g., households with a chronically ill member) in Malawi own fewer cattle than the general sample population.

Moreover, rearing livestock also requires human and capital resources. Such resources are often lacking in AIDS-affected households, as a

⁵⁶ Money realized from this trade usually ranges from K20–K500 per day. On rare occasions it can reach K1 000 to K2 000 (US\$ 8–16) per day. However, this income is not consistent and depends on the clients (White et al., 2004).

⁵⁷ In Shah et al. (2002) a few households even mentioned selling their iron sheets used as roofing material.

⁵⁸ When investigating the sequencing of assets liquidation the following pattern has been observed: 1) savings, 2) business income, 3) household assets, 4) productive assets, and 5) land (Mbaya, 2002).

result of death or increasing costs associated with the long duration of illness of a household member. A lack of active adults (particularly males) means less ability to protect livestock from theft. Insecurity in rural areas, particularly due to theft of crops and livestock, is a big problem in Malawi (GoM 2002; Pelser et al., 2004). The HIV/AIDS epidemic compounds this effect in several ways.⁵⁹ Without sufficient financial resources, HIV/AIDS-affected households have less money available to pay for livestock related expenses (e.g., feed, pesticides, etc.). Hence, HIV/AIDS-affected households tend to have fewer livestock than non-affected households, because of divestment or loss.

2.3.3 Borrowing to Meet Increased Costs

Not all households have the necessary cash reserves to meet the increasing expenses related to HIV/AIDS illness that consume both cash savings and assets. In this situation, some resort to borrowing. A study by Mbizule (2004) found that 27.3 per cent of the households with a chronically ill member borrowed money, which can be compared to almost 23 per cent in the general study population. However, Shah et al. (2002) found that only about 14 per cent of the households affected by chronic illness borrowed from other villagers, and among the non-affected households even fewer did.⁶⁰ It has also been observed that the use of micro-credit for HIV/AIDS-related medical expenses crowds out the household's ability to take loans for agricultural expenses, such as seeds, fertilizers or tools.

In terms of borrowing from financial capital services (credit, savings, and insurance), one study found that about one-quarter of the households investigated belonged to farmer clubs and credit clubs, and these were primarily the better-off households. In contrast, female-headed households had difficulty accessing loans and were less likely to belong to these clubs (Frankenberger et al., 2003). The poor primarily rely on informal credit at high interest rates or on group-based micro-finance services. Affected households may be forced to hold distress sales in order to endure the increased burden of medical and funeral expenses. Crops are harvested and sold before maturity, standing crops may be pledged against a cash loan, or a part of the meagre food stock could be sold to meet some of the most pressing needs (Shah et al., 2002).

2.3.4 Adjustments of Funeral Practices

In response to increased funeral expenses due to increased HIV/AIDS-related deaths, some reports indicate that changes in burial practices are currently taking place to minimize the costs associated with funerals.

Traditionally, funeral ceremonies lasted four to seven days, with more rituals after one month, 40 days or a year. Now, as the HIV/AIDS epidemic adds to the number of dead and funeral expenditures, mourning periods as well as ceremonies have become shorter and less expensive. Anecdotal evidence also indicates that funerals are increasingly postponed to the weekends when possible and that nowadays it is more common that only the closest family attends the funeral. However, this is only possible if the deceased died towards the end of the week, since there is a general lack of mortuaries in Malawi to keep the corpse.

⁵⁹ The epidemic leads to poverty, which increases the number of people using theft to secure income. In addition, adults absent from home for long periods cannot guard their animals (Ngwira et al., 2001).

⁶⁰ It is also possible to expect that borrowing has been hampered because families affected by HIV/AIDS experience stigma and discrimination by community-based credit groups.

Anecdotal evidence also indicates that even if the cause of death is HIV/AIDS, this is more often stated directly at the funeral today than previously. This indicates that the heavy stigma and discrimination surrounding the disease has been somewhat lessened, at least in some villages. These observations are consistent with observations in countries such as Uganda, Tanzania and Zambia.

2.4 Responding to the Indirect Costs of HIV/AIDS

The household may use a variety of traditional coping strategies to deal with specific hardships and problems. To illustrate this, we investigate the coping strategies developed to deal with the labour losses that result from the illness of a prime-age adult, including the use of child labour. We will also analyse the most commonly employed coping strategies used by subsistence farmers related to land. Finally, female-specific coping strategies will be considered.

2.4.1 Relying on the Informal Safety Net

Assistance by extended family networks is a crucial source of support for households coping with the loss of a prime-age adult due to HIV/AIDS (Munthali, 2002; Shah et al., 2002). Care for the sick and orphans is primarily a household responsibility. However, the increased burden of an affected member is often felt beyond the household experiencing the illness and death, by relatives or neighbours who may share the responsibility of taking care of the sick and organising funerals after death. Neighbours usually help with small immediate needs on a reciprocal basis. This interdependence between households and relatives in a community also increases the number of affected households in a society. The fear is expressed that as HIV/AIDS impacts on larger number of families, the social networks may begin to break down.

If the extended families do collapse, we may begin to see an increasing number of street children, youth gangs, and youth-headed households in the future. For such households, education may no longer be viable, and that makes this group even more vulnerable to HIV. However, a recent study provides evidence from the national level that so far only one per cent of children (aged 14 and younger) live in child-headed households, a finding that further shows the importance of the extended family in terms of orphan care (Doctor, 2004).

Shah et al. (2002) found that over 20 per cent of the households affected by chronic illness sought long-term support from others. However, in a recent study by Masanjala (2005), as much as 30 per cent of the respondents answered that they got help from the community when experiencing the death of a household member, while 24 per cent sold assets and 20 per cent said that they borrowed money. This help is often in the form of receiving food and other necessities, moving in with relatives, taking care of children, helping with farming practices, and so forth.

Poverty-stricken extended families and communities are increasingly put under pressure, at the expense of caring for HIV-infected chronically sick and growing numbers of AIDS-related orphans. As we mentioned earlier, the burden of nursing the sick falls heaviest on women (girls and grandmothers) who are also obliged to take on the responsibilities of sick or dead parents. Recently, however, the pressure of the large number of orphans has led to the establishment of village-based orphanages to effectively care for this immediate need in several sites throughout Malawi. A study by Chiwona-Karlton et al. (2005) conducted in the area

of Domasi town, for instance, showed that no less than three village-based orphanages have been established.

2.4.2 Children are Taken out of School

A visible impact of the HIV/AIDS epidemic is that children are taken out of school at an early age. This is done either because parents or extended families cannot afford the direct cost of schooling or because the child's labour is needed in the household to meet the shortfall of a prime-age adult. Despite policies and laws designed to curtail exploitative child labour, the practise continues in many settings (DHS, 2004).

In the DHS (2000), 27 per cent of the children aged five to 14 were either working for a non-relative (paid or unpaid) or spent four or more hours a day doing household chores. According to the DHS report for 2004, this indicator has exploded over the years to a level of 37 per cent in 2004. In contrast to the results from the 2000 survey, girls were more likely than boys to do domestic work in 2004.

Both in Malawi and other countries in sub-Saharan Africa, girls are more prone than boys to be withdrawn from school in the event of a prime-age adult death (e.g., Ngwira et al., 2000). This finding is supported by national statistics that show the average dropout rate for standard 1–9 to be 31 per cent for girls and 25 per cent for boys in 2005. In addition, data reveal a distinct difference between boys and girls in the passing rates of final exams: boys clearly do better (Ministry of Education, 2000, 2005). This suggests that, despite initiatives to promote the continuation of girls' schooling, boys are to a greater extent than girls able to move past a primary education (DHS, 2000).

The withdrawal of girls from school due to HIV/AIDS can have more serious long-term implications. Educated mothers, for instance, tend to bear fewer children than less educated women. They are also more likely to send their children to school and immunise them against childhood diseases. Hence, if girls' educational levels decline, other development goals, such as reduction in fertility and a decrease in child/maternal mortality, might be difficult to achieve (Ngwira and Mkandawire, 2003). Moreover, when girls are withdrawn from school at an early age, their prospects for getting employment diminish; this is especially true for qualified and highly paid jobs. As a result, inequality in education will further fuel gender biases in the labour market.

2.4.3 Change in Cropping Pattern and Crop Mix

It has been assumed in previous research that HIV/AIDS is bringing about important changes in farming systems. In a large number of studies, it is proposed that cash crops, as well as those crops requiring expensive inputs, may be dropped as a response to prime-age adult death. Cash crops such as tobacco or Irish potatoes are generally labour intensive. Accordingly, they should be the first to be abandoned due to HIV/AIDS labour shortages within the household, as available labour is reserved for subsistence crops. However, while subsistence crops typically demand less labour, they tend to be lower in either value or nutrition than cash and grain crops.

Several studies from Malawi indicate that AIDS-related mortality brings about the described changes in the farming households' crop mixes. One of the main findings by Mather et al. (2004), for instance, was that three-quarters of the investigated households changed their usual crop mix towards less labour-intensive crops (e.g., cassava) in response to labour shortages in the household and lack of resources to obtain agricultural

inputs. However, whether such impact stems directly from HIV/AIDS is hard to say since there are many variables affecting a farmer's decision to grow one crop over another, including the income generating ability of the crop, its resistance to weather conditions and input prices and policies (see also Chapter 3 on production in small scale agriculture).

2.4.4 Land Left Fallow

It is a common coping mechanism in sub-Saharan countries for small-holders to cultivate only a portion of their land or to leave it fallow when a family member either falls ill or dies just before the agricultural season has started. This is because of too little labour and/or the inability to procure farm inputs.

According to Shah et al. (2002), the strategy of leaving land fallow is primarily resorted to by poor households in Malawi. The better-off households are often able to hire wage labourers (*ganyu*) to take care of their agricultural operations. Moreover, as a result of a combination of responses by households affected by prime-age mortality, such as households relinquishing part of the land or a generally high labour-to-land ratio, the pressure for agricultural land will result in land being left fallow to a very small extent and only as a short-term solution. One of the few situations under which land would be left fallow for successive seasons is if all rural-based members of a family have died and the children have moved elsewhere (Mbaya, 2002).

HIV/AIDS also has the potential to increase the activity in the land market. This is the result of households trying to derive benefits from their landholdings when they are not able to cultivate the land anymore. Anecdotal evidence also suggests that sales of land have been observed as a coping strategy in households with prolonged distress and few available economic resources. Renting out land is resorted to when the distress is perceived to be short-term. Another response to the impact of HIV/AIDS is to allow relatives to use the land temporarily or to rent out a part of the landholdings.

2.4.5 Female Coping Strategies

Many women lose their rights to matrimonial land upon the death of their spouses, as pointed out earlier. In situations like these, women employ a range of strategies to ensure continued access to land. Such strategies include: remarriage, to gain access to a new piece of land; never re-marrying, to secure the permission of in-laws to continue to have access to part of late spouse's land; and, remaining on matrimonial land through a relationship with the late spouse's brother ('wife inheritance').

One coping strategy seen in Malawi, as well as in other countries, orphaned girls or young women in particular use is early marriage (often at the expense of getting an education) (Munthali, 2002). For female orphans, marriage becomes a way of escaping the welfare gap and low status of being an orphan. As a consequence, sexual activity as a prelude to finding a partner for marriage begins very early in Malawi (Ngwira et al., 2005). This is consistent with the evidence that the median age at which women have sex for the first time has been declining for a number of years, indicating that it has become more common for adolescent girls to have sex before marriage. Through a similar process, orphans already made vulnerable by AIDS face an even higher risk of contracting HIV (Bryceson et al., 2004).

Summing up, in the second part of this chapter we show that it is important to know how well the households are able to cope with the

increased loss of labour to be able to properly assess the impact of the epidemic. The interaction of several factors, such as access to resources and the ability of the community to provide support, determines the severity of impact and a household's ability to cope with the economic impacts of HIV/AIDS. The organisation in extended families is a very important informal safety net that helps communities cope with HIV/AIDS. However, there is a fear that as HIV/AIDS impacts on a larger number of households, the extended family system may break down under the increasing numbers of orphans and sick people.

2.5 Impact of HIV/AIDS on the Urban Non-Farm Informal Sector

In this section, we briefly discuss the characteristics of the urban informal sector in Malawi. We do this by focusing on a few of its crucial characteristics, such as its size and importance as a source of income for households in Section 2.5.1. Based on this information, we describe the impact of HIV/AIDS on this sector in Section 2.5.2. Finally, in Section 2.5.3, we focus on the women's situation in the informal sector.

2.5.1 Characteristics of the Urban Informal Sector

There is as yet no commonly agreed-upon definition of the informal sector, which makes a comparison between various studies problematic. However, in general the informal sector consists of small-scale enterprises engaged in a wide range of economic activities on the border to the formal economy.

The informal sector is a sector of growing importance in producing goods and services, and it is a major employer in many developing countries. In Malawi, it provides jobs to people who would otherwise be unemployed since there are few formal jobs available.⁶¹ In particular, one of the coping strategies used in response to HIV/AIDS is to rely increasingly on income earning activities coming from the informal sector (e.g., petty trading) (Devereux, 1999).

According to a study by Madziakapita (2003), who interviewed 600 informal sector participants in the three major cities in Malawi, the two issues that enhance the growth of the informal sector are the lack of formal-sector employment and the desire to survive. People go into the informal sector primarily for the following reasons: lack of formal employment (45.8 %); to survive and support their family (20.7%); and, due to the belief that they can earn more in this business (17.8%). Of the respondents in this study, only 11 per cent were female. Cultural and economic barriers explained the small number of females.

It is hard to single out how large the share of the *urban* informal sector is in the total informal sector. In 2002, 18 per cent of people aged five and over were regarded as regular formal-sector employees. Similarly, in a study by UNICEF (1991) 14.5 per cent of the labour force worked in the modern sector in 1991 (some 530 000 people), while 85.5 per cent worked in the informal sector (about 3 200 000 people). A recent study on micro and small enterprises found that these firms employ about 1.7 million people and contribute to about 15 per cent of the GDP (Grant, 2002; Sephiri, 2002).⁶² Based on this information, a reasonable approximation of the size of the non-farm informal sector is about ten per cent of

⁶¹ For a long time, there has been a debate about the importance of the informal sector in the development literature. Because of considerations of space, we will not go into detail about this debate here.

⁶² Higher estimates of the contribution of the informal sector GDP (as a percentage of non-agricultural GDP) are found in sub-Saharan Africa overall (41 per cent) and in Zambia (1998) (24%) (ILO, 2002).

the total labour force. The remaining 90 per cent work within the agriculture and formal sectors.

Available statistics on informal work outside agriculture in Uganda and South Africa support this estimate. In Uganda, ten per cent of the population were employed in non-crop informal enterprises. In South Africa, the proportion of people engaged in informal employment outside of agriculture in 2002 was 28 per cent (Lee, 2004; ILO, 2002a).

In sum, this leaves us with a likely (and large) span defining the size of the informal sector, measured as a percentage of the population employed within informal employment outside agriculture, as between ten and 30 per cent of the population.

2.5.2 Impact of HIV/AIDS on the Informal Sector

Because of limited research and data on the impact of HIV/AIDS on the informal economy, we assume that the impact on this sector will be felt more or less in the same manner as it would be in a small size company. Based on this assumption, we perform a brief analysis.⁶³ In addition, the analysis will be supported by findings from other countries in sub-Saharan Africa whenever relevant.

Although data on the impact of HIV/AIDS are limited, it is quite clear that as workers in the informal sector get infected with HIV and fall ill, they will either be absent from work or perform below their normal level of productivity. Eventually, this will affect profits. When workers develop full-blown AIDS and become too weak to work, a regular company would be forced to replace them. In addition, this will incur recruitment and training costs for replacing experienced workers lost through HIV/AIDS. The same is not expected to happen in the informal sector to the same extent. A more likely outcome is that informal businesses will have to close down, disappear or will be replaced by other businesses.

However, the above analysis needs to be enriched with some conditions applicable to the informal sector. According to the ILO, informal economy workers are especially vulnerable to the impact of HIV/AIDS for four major reasons: (1) their activities are rarely based on (or lead to) financial security; (2) the nature of their work is usually heavily dependent on their labour; (3) they do not have access to health facilities and social protection schemes; and, (4) they do not usually have access to credit to help them develop their business.

In particular, it is reported that the small size of the enterprises makes it difficult to replace a skilled or semi-skilled worker if the employee falls sick or dies. This is similar to what regular small sized firms experience. Because of their size, they will also find it difficult to absorb the costs of increased absenteeism, staff turnover and death. They are therefore much more vulnerable to the impact of HIV/AIDS than large enterprises and indeed than regular small sized companies. This finding is supported by other studies on the impact of HIV/AIDS on the informal sector (Wilkins, 1999).

While most of the above was found to be valid for the general conditions in the Malawian informal sector, it contrasted with the first point mentioned, i.e. that activities of informal sector participants are rarely based on (or lead to) financial security. That is, based on the information from a study of 600 persons employed within the informal sector in

⁶³ What can be used instead in this case are individual studies to serve as benchmarks. Unfortunately, there exist no such estimates for Malawi.

Malawi, it was found that activities in this sector in many instances actually lead to financial security. Informal sector businesses are a relatively good source of income in a country like Malawi where about 40 per cent (about five million people) live on less than US\$ 1 a day (UNDP, 2004). More than 80 per cent of the informal sector participants earn enough money from their businesses to make a good livelihood (Madiziakapita, 2003).⁶⁴ According to the same study, there are indications that informal sector benefits are also benefiting the rural areas in Malawi. Of the 600 participants interviewed in this sector, 64 per cent send some money back to their home villages to support their relatives.⁶⁵

It is worth making some additional comments about the point mentioned above, that workers in the informal sector do not have access to health facilities. In Malawi, public health care included in the Essential Health Care Package is basically free of charge. As a result, there is in theory no obstacle for proper care for informal sector workers.⁶⁶ Nevertheless, it might not be a realistic assumption, due to the poor status of the health sector.

In addition, HIV/AIDS tends to make the informal sector participants even more marginalised than they already are. Research suggests that non-farm income sources are often jeopardised in HIV/AIDS-affected households, mainly among those who already are asset-poor and vulnerable. With fewer prime-age adults in the household, non-farm income is likely to fall. In particular, since non-farm income sources are often gender specific, the remaining family members may not easily replace the lost labour, such as the labour input in staple food production. Thus, a prime-age adult death may result in the loss of that source of income, as pointed out earlier.

2.5.3 Women and HIV/AIDS in the Informal Sector

In this final section, we focus on the situation for women in the informal sector, since they have been identified in studies from other countries as being particularly vulnerable to HIV/AIDS (e.g., Wilkins, 1999). No studies with this specific focus have been found for Malawi.

Trading is the most common non-farm business activity for both urban and rural areas in Malawi overall, and for women in particular, who primarily engage in petty trading. Poverty and inequality are also visible in street trading environments, and considerable literature has established clear links between these factors and the transmission of HIV/AIDS (Barnett and Whiteside, 2002; Walker and Gilbert, 2002).

Parallel results were obtained in a comparative study on Uganda and South Africa. There it was found that street trading in both countries was one of the largest sectors of informal work, and women made up the majority of the street traders (Lee, 2004). Research from other countries in the informal sector shows that women are generally disadvantaged, which is due to their lack of education, access to resources, and limited bargaining power compared with men. It has been found that the street trading environments are often characterised by poor occupational

⁶⁴ Forty-nine per cent made less than K500 (US\$ 7) per day, while 28 per cent made an average of K501 to K1 000 (US\$7–13) per day. Twelve per cent made K1 001 to K2 000 (US\$13.3–26.7) per day. Seven percent made K2 001 to K3 000 (US\$ 26.7–40) per day. The remaining four per cent made more than K3 000 (US\$40) per day.

⁶⁵ Sixty-four per cent sent less than K1 000 (US\$13), while 26 per cent never sent anything. The remaining ten per cent sent more than K1 000 per month. However, this is not a practice unique to informal sector participants. Formal sector employees also support their families in the rural areas.

⁶⁶ Briefly, the Essential Health Care Package addresses the major causes of morbidity and mortality among the general population (GoM, 2002, and Kemp et al., 2003).

health and safety standards. As a result, and because of the usual multiple responsibilities of domestic and productive work that fall on women, they faced greater exposure to general and work-related risks. Those risks include the heightened risk of ill health (Lee, 2004; Chazan, 2005). Moreover, because care-giving is usually the task of women, it appears that the rise of prolonged illness and care due to AIDS has reduced the time available for women to engage in income-earning activities more than it has for men. Jayne et al. (2004) expect this trend to become even more pronounced in future decades in the hardest-hit countries as the disease escalates.

Recent statistics in many countries in sub-Saharan Africa show that slightly more men than women work in the informal sector, but that more women participate in informal compared to formal work. Moreover, in sub-Saharan Africa, self-employment (as a percentage of non-agricultural informal employment) in the informal sector amounted to 71 per cent for women and 70 per cent for men between the years 1994 and 2000 (ILO, 2002).⁶⁷ Together, these two findings might serve as a first indication of the situation in Malawi. However, due to shortage of data, we cannot confirm this.

Summing up, in the last part of this chapter we have seen that Malawi's informal sector is a key sector for employment and income generation for a large part of the population. There is also an indication that it is often possible to make a sustainable livelihood from this activity. Moreover, since 64 per cent of the participants in the informal sector send something back to their home villages to support their parents and relatives, the benefits from the informal sector also seem to benefit the rural areas. The informal sector participants are in general marginalized, and HIV/AIDS makes them become even more so. In addition, women are particularly disadvantaged in the informal sector. This in turn leads to a greater exposure to health-risks such as contracting HIV infection.

2.6 Conclusion and Discussion

While definitive answers concerning the impact of HIV/AIDS on the micro level are not yet possible, research sheds light on some crucial aspects. We briefly present below some of our conclusions and discuss further implications of the findings in Chapter 2.

We have shown that the intensity of the impact of the epidemic is not felt uniformly across the affected households and individuals; rather, it will depend on a large variety of factors. The impact will primarily hinge on the available resources and the circumstances under which the epidemic strikes. Simplified, we may say that the greater the various costs (direct and indirect) of HIV/AIDS, the greater the impact will be. The impact at the household level is determined by variables such as the timing and duration of illness, the relative socio-economic status of the household, the affected individual's position in the household, social norms of marriage, and so on. Moreover, the earlier finding, that AIDS-related mortality leads to less labour, increased poverty rates and land scarcity and that this in turn affects agricultural production among affected households, is largely confirmed.

AIDS-affected households to a larger extent use coping strategies such as selling assets, increasing their borrowing, and reliance on ganyu

⁶⁷ Informal activities in agriculture were not included in the estimates of employment in the informal economy reported. Since agricultural activities are an important source of employment (as indicated earlier), especially for women, their exclusion reduces the overall estimate of the size of the informal economy (ILO, 2002).

labour than non-affected households. Paradoxically, ganyu labour also increases the susceptibility to HIV/AIDS infection. Some argue that this is one of the socio-economic impacts by which HIV/AIDS is changing the contours and dynamics of poverty. Taken together, this may exacerbate unequal asset distribution and lead to landlessness and destocking.

The impoverishment of a household is frequently caused by the AIDS-death of a prime-age adult. Changes in the traditional administration of customary land is one driving force behind the impoverishment of a household, as this may threaten the livelihood security for vulnerable residents of customary land. The current lack of a common system on the customary land market for a more equal land distribution is a factor contributing to this development. Another issue is the dispossession of property of widows and orphans. Although not directly due to the HIV/AIDS epidemic, this is becoming more prevalent under the same. Given that poverty incidence usually rises as the amount of land owned or operated by poor rural households declines, this process is likely to negatively influence poverty and livelihoods in the long run. Moreover, once land and livestock are sold, the recovery potential of these households is severely diminished. Deepened poverty is the culmination of this process.

A frequent coping strategy within households experiencing scarcity of labour is to rely on child labour by withdrawing their children from school. This in turn damages these children's education and future skills base, leading to long-term effects for society as a whole. This is true for both sexes but to a greater extent for girls, since they are more likely than boys to be withdrawn from school in the event of an adult household death. As a consequence of less schooling, women will have less knowledge about their own legal and human rights, and goals of gender equality are undermined. Moreover, with an increasing number of children taken out of school and a breakdown in the knowledge transfer between generations, one can expect the impact of HIV/AIDS to be felt beyond the current generation. This will probably also have negative effects on agricultural production, as children are gradually given greater and greater responsibility for providing agricultural labour. This could result in agricultural practices that are less efficient and of lower quality.

3. Impact of HIV/AIDS on the Real Economy

This chapter looks at how HIV/AIDS affects production in Malawi. The first section discusses Malawi's past macroeconomic performance and the role of HIV/AIDS, focusing on the determinants of economic growth. In the second section, a simple model is used to simulate different scenarios for GDP per capita for the period to 2015; a tentative discussion about long-run consequences after 2015 is left for Chapter 5. The following sections deal with the effects of HIV/AIDS on the economy from different angles. Section 3.3 examines the impact of HIV/AIDS on agriculture and manufacturing, and firms' response to HIV/AIDS and associated costs. Finally, section 3.4 highlights environmental consequences.

3.1 Economic Growth

There exist numerous studies on the impact of HIV/AIDS on economic growth. The studies use either data on a cross-section of countries or on a particular country.⁶⁸ Nonetheless, only three studies exclusively deal with Malawi. Two of them, Cuddington and Hancock (1994a, 1994b), are very old studies in this context. Both predict a modest decrease in per-capita GDP growth, which is in line with the results of most analyses from the 1990s. In the models of Cuddington and Hancock, AIDS affects growth through three channels. First, it reduces the size of the labour force because of premature death. Second, workers' efficiency declines because of bad health and loss of cumulative work experience. Third, saving declines because of increased health expenditure. The final impact is determined by the decline in labour productivity and whether the capital-labour ratio increases or decreases. It has become clear over time that models developed along these lines tended to underestimate the impact of HIV/AIDS; important mechanisms are missing in the models, and they failed to predict the rapid spread of the epidemic (Nattrass 2002; Casale, 2005).

The third study, Andersson (2005), is in line with several studies on HIV/AIDS in Sub-Saharan Africa that have challenged the results from the 1990s using more sophisticated models. However, she finds that without government intervention, HIV/AIDS will only reduce GDP per capita by about 4 percent over the period 2000–2020, although some

⁶⁸ For reviews of studies on the macroeconomics of HIV/AIDS, see Barnett and Whiteside (2002), Nattrass (2002), Haacker (2004) and Casale (2005).

households may experience a decline in income of over 20 percent. An example of a recent study that differs markedly from the old ones is Bell et al. (2004). They find that the South African economy is likely to collapse due to a sharp contraction in the stock of human capital caused by AIDS. Another study on South Africa, Young (2005), finds that the epidemic is an economic boon for the survivors. In his model, there is a decline in fertility due to increasing real wages and fear of infection, and this outweighs the negative effect of the fall in human capital. Two more recent studies, Kalemli-Ozcan (2005) and Lorentzen et al. (2005), emphasise another effect: the impact of adult mortality on the time horizon people use when planning for the future. They find empirical support for the hypothesis that the mortality of young adults influences fertility; families have more children when the uncertainty of survival of their offspring increases. In addition, Lorentzen et al. (2005) show that adult mortality affects economic growth by reducing both physical capital accumulation and enrolment rates to secondary education. Hence, they argue that AIDS, by increasing adult mortality, has strong negative impact on growth in per capita income by increasing fertility and reducing investments.

We make no attempt to explicitly model the impact of HIV/AIDS in Malawi. Instead we view the epidemic as a part of the economy that at least to some extent has shaped recent development. This is in line with McPherson (2003), who argues that HIV/AIDS by now must be treated as an intrinsic part to the economy in countries with high prevalence, and because of this, modelling HIV/AIDS is difficult even in the best of circumstances, i.e., where there are long time series data or detailed knowledge of various quantitative effects.

A straightforward way of looking at economic growth is to use a production function, which shows how changes in production, measured as value added, result from changes in inputs of production factors and productivity. This is the approach used in the following sections, focusing on the major determinants of economic growth, physical and human capital formation, labour supply, and productivity growth. An understanding of their roles in the growth process is essential when discussing HIV/AIDS and the future development of Malawi.

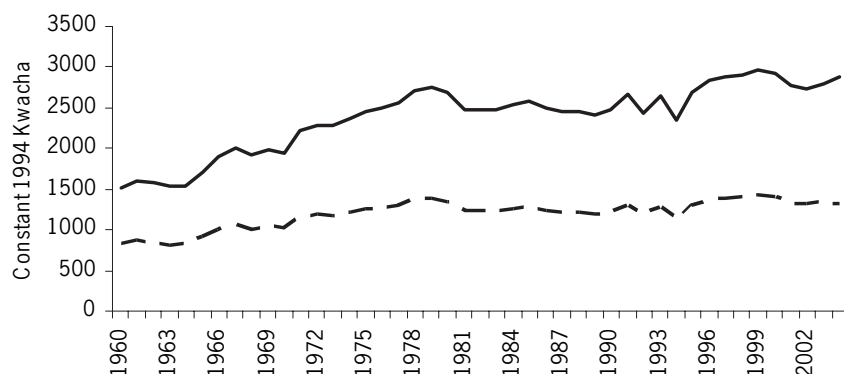
3.1.1 A Look at Output, Capital, Labour and Productivity

To give a picture of Malawi's growth experience, Figure 4 shows GDP per capita and labour productivity (GDP divided by the labour force), over the period 1960–2004. There are three clearly discernible periods in the GDP-per-capita series: positive growth between 1964 and 1979, a steep decline in 1980 and then 15 years without growth, and, finally, a level shift upwards around 1995. Labour productivity follows a similar pattern, although there are more pronounced shifts.

The growth period, 1964 – 1979, was characterised by macroeconomic stability and policies that aimed at generating agricultural exports. Although successful in generating growth, this policy did not create a general expansion in the Malawi economy because it favoured estate agriculture over smallholder agriculture. One consequence was that a large part of the population was left out of the development process (Pryor 1990, pp. 124–25). In the late 1970s and early 1980s, a series of external shocks hit Malawi's economy, initialising the second period, 1980–1994. The shocks included a fall in export prices, a rise in import prices (such as the oil price), a dramatic increase in transport costs for foreign trade due to the war in Mozambique, and drought. On top of

this, Malawi had to host more than 750 000 Mozambican refugees from the mid-1980s.

Figure 4: GDP Per Capita and Labour Productivity 1960–2004 (in 1994 Prices)



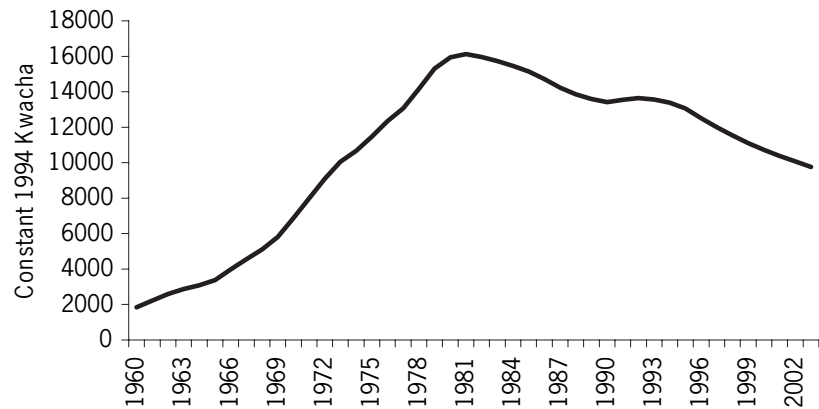
GDP per capita ———, labour productivity -----

Note: Labour productivity is GDP at market prices, measured in constant 1994 prices, divided by the labour force. The source of the data is World Bank Development Indicators (2005).

In the early 1990s, Malawi was hit by two severe droughts and a deterioration of the terms of trade. Moreover, due to donor concerns about overspending, lack of human rights, and poor governance in relation to the elections 1994, balance of payments support was suspended. All this resulted in a severe crisis: GDP dropped by about ten per cent in 1994. Hence, annual GDP growth declined to 0.0 per cent over the period 1992 – 1995. The third period (1995 to today) was initiated in 1994 by the ending of the war in Mozambique and the election of a democratic government, the first in the history of Malawi. The new government embarked on a wide-ranging structural adjustment program with the support of the World Bank, the IMF, and several donors. Although fraught with problems, the implementation of the structural adjustment was initially fairly satisfactory and GDP growth rose to 5.5 percent over the period 1996 to 1999. However, economic growth has slowed down since then. It averaged only 2.3 per cent 2001–2005 (Global Insight, 2005).

Figures 5 and 6 below show the development of the capital stock and total factor productivity. Capital, which traditionally is viewed as the most important determinant of economic growth, is depicted in Figure 5 in the form of the capital-labour ratio (the capital stock divided by labour force). Changes in the ratio seem to correspond quite well to the two first growth-rate episodes in the Malawi economy. The capital-output ratio grew continuously during the period up to 1979; it then declined during the following 10 years and then stayed constant up to 1994. However, after 1994, the decline continued, even though there was an increase in economic growth and labour productivity during the latter half of the 1990s. Nevertheless, overall capital accumulation appears to have played an important role in Malawi's growth process; the period of rapid growth of the 1960s and 1970s is associated with an increasing capital-labour ratio, while the slow growth of the 1980s and 1990s is associated with a decreasing capital-labour ratio.

Figure 5: Capital-Labour Ratio, 1960–2003



Sources: Nehru and Dhareshwar (1993), Bosworth and Collins (2004), and the authors' own calculations with data from World Development Indicators (2005) and Reserve Bank of Malawi (2005).

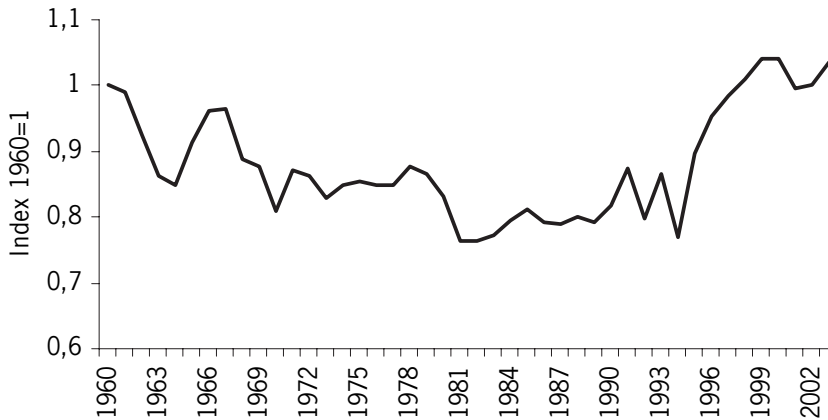
Although capital formation is important for economic growth, differences in total factor productivity (TFP) explain why some countries are rich and others are poor. We measure TFP as the part of the growth rate that cannot be explained by capital accumulation or labour force growth. It is basically a measure of output divided by a weighted average of the inputs capital and labour.⁶⁹ TFP should be viewed as a general measure of productivity, including social, demographic and political factors as well as changes in the technology used. Moreover, in our calculations, human capital in the form of health and education is also captured by TFP. Accordingly, many of the economic consequences of HIV/AIDS should show up in the form of a declining TFP.

Figure 6 depicts the evolution of TFP. Since the level of TFP is not defined, 1960 is set to unity for convenience. The most notable thing about Malawi's TFP is that there was hardly any growth over the last 40 years; in fact, TFP was at the same level in 2000 as in 1960. Moreover, there was no growth in TFP during the years of rapid capital accumulation. In other words, TFP was not higher in 1979 than in the beginning of the 1960s. It is thus evident that changes in labour productivity reported in Figure 6 were largely due to changes in the capital-labour ratio. This implies that economic growth has primarily been driven by investments, a feature of the Malawi economy also noted by the World Bank (1997).

Nevertheless, Figure 6 shows that TFP increased rapidly between 1995 and 1999. Although there is uncertainty about the actual size of the upward shift, it constitutes a change in Malawi's growth pattern. Since it occurred during a period when the number of annual AIDS deaths rose from about 30 000 to 70 000 and there were about 90 000 new HIV infections per year, other factors than HIV/AIDS seem to have dominated the course of TFP during the 1990s.

⁶⁹ The formula used to calculate TFP is $TFP = (Y/L)/(K/L)^{0.35}$. We assume a Cobb-Douglas production function with constant returns to scale. The overall pattern of TFP is not sensitive to realistic changes of the technology parameter, set to 0.35. For instance, changing it to 0.5 hardly alters TFP. The functional form and parameter values do not seem to matter much for the pattern of TFP either. Durevall (2002) reports TFP up to the year 2000 estimated with a different approach, Data Envelope Analysis. Although it does not impose any functional form or parameter values, the result is practically the same.

Figure 6: Total Factor Productivity Growth 1960–2003 (1960=1)



Source: The authors' own calculations. The formula used is $TFP = (Y/L)/(K/L)^{0.35}$. All variables were standardised to unity in 1960.

3.1.2 What Determines the Growth of Capital, Labour, and Productivity

The next step is to look at potential determinants of capital accumulation, labour supply, and TFP, and discuss the role of the AIDS epidemic. First, we evaluate different forces driving capital formation. Then we look at the development of the labour force and the demographic transition. Finally, human capital formation and other factors that influence TFP growth are discussed.

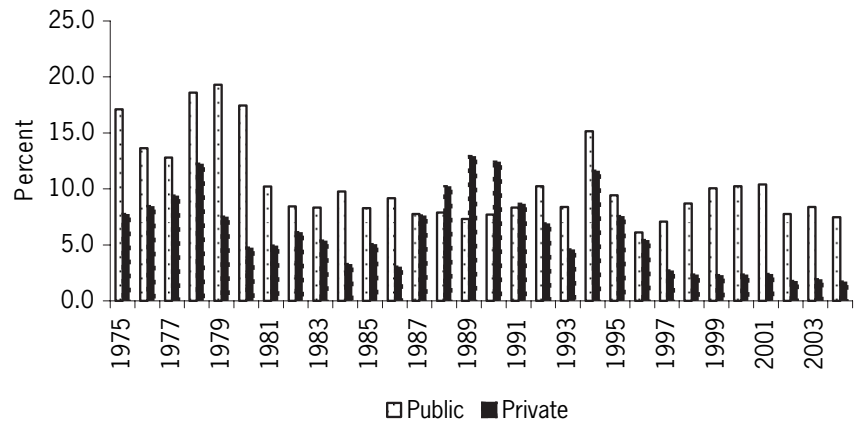
3.1.2.1 Physical Capital Accumulation

There are several mechanisms whereby HIV/AIDS can affect capital accumulation, both through its effect on the saving rate and by directly reducing the investment rate. One effect comes from increased adult mortality, which reduces the probability of survival and the expected pay-off from saving and investment. Another one is the effect from families exposed to HIV/AIDS who have to run down their savings as income declines and expenditure increases. Then there is the private sector, where HIV/AIDS reduces investment by increasing the cost of production, which in turn decreases current and expected profits, and the public sector, where it adversely affects the resources available for public investment. Moreover, HIV/AIDS is likely to reduce foreign direct investments (McPherson, 2003).

Figure 7 depicts investment in per cent of GDP over the period for which consistent data are available, 1975–2004. Since the government plays an important role in the Malawi economy, we distinguish between public and private sector investment. Public investment was clearly larger on average than private investment, and less volatile, at least over the period 1980–2004.

In Malawi, the availability of foreign aid, in particular disbursements of project aid, determines variations in public investment to a large extent (Mangani, 2004), while the private sector investment is more likely to respond to HIV/AIDS. As Figure 7 shows, private investments were low during most of the 1980s but rose at the end of the decade. They dipped in 1991–93 and then peaked at about 12 per cent in 1994. After 1994 private sector investment started to decline. By 2004, it was only 1.7 per cent of GDP.

Figure 7: Private and Public Sector Investments 1975–2004 (% of GDP)



Note: The calculations were based on gross domestic fixed investment. Source: World Bank Africa Database (2004) and Reserve Bank of Malawi (2005).

It is not straightforward to explain private sector investments with the spread of HIV/AIDS. The annual number of AIDS deaths is probably the variable available that would best capture the impact of the epidemic on investment. However, it grows rapidly from about 1990 until 2003 (see Chapter 1), while private investment first rises and then falls during this period. Nonetheless, there might be a non-linear relation between the two variables and/or other factors might play an important role. For example, expectations and increased profit opportunities related to the ending of apartheid in South Africa in 1990, and the war in Mozambique soon after, probably explain the rise in investments around 1990. In addition, the first democratic election in 1994 most likely explains the increase in 1994. Nonetheless, the extremely low private sector investment rates observed during the last eight years are certainly consistent with widespread HIV/AIDS.

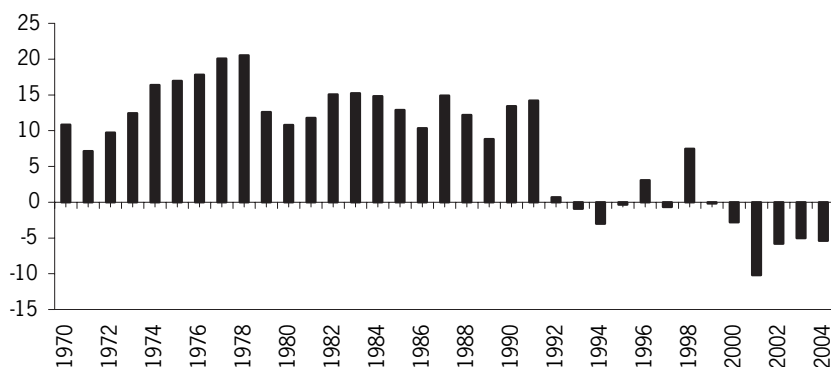
In an economy that is open to trade and capital flows, domestic saving should not matter for investments since they can be financed from abroad. However, in practice, saving appears to be important for investment even in open economies, particularly in poor countries with a small financial sector.

As reported in the previous chapter, HIV/AIDS is likely to influence the saving rate of households by altering the allocation between consumption and saving. Various factors, such as increased expenditure on health and funerals, lower disposable income and reduced life expectancy may all contribute to an erosion of savings. On the other hand, there are factors that may counteract this. Forward-looking individuals may actually increase their saving because of expected future expenditures on HIV/AIDS. Moreover, changes in income distribution can raise the amount of saving if those well off have a higher saving-to-income ratio. Currently, there are no studies on how HIV/AIDS affects total household saving in Malawi or elsewhere; in Malawi, there is no national data on the decomposition of private saving (Nattrass, 2002; Mangani 2004). In spite of this, it seems reasonable to assume the epidemic reduces household saving on an aggregate level in an economy such as Malawi, where HIV/AIDS is so widespread that almost every household is affected.

There is also reason to expect private companies to save less. When the epidemic results in lower profits, retained earnings are likely to decline, and thus saving. However, there are offsetting effects. Labour shortages and/or rising real wages may create a desire to raise capital-labour ratios, a coping strategy on the part of the firms. This would raise investment and thus saving. According to Mangana (2004), dividends currently constitute about 60 per cent of net profits. Thus, there is scope to increase retained earnings and higher private investment in the future.⁷⁰

Figure 8 depicts gross domestic saving as a share of GDP for the period 1970 to 2003.⁷¹ Overall, the saving ratios are low. However, they seem to have evolved in accordance with investments: they were high in the 1970s, declined in the 1980s, and dropped significantly in the beginning of the 1990s. Hence, changes in domestic saving are likely to have contributed to the variations observed in capital formation.

Figure 8: Gross Domestic Savings as a Share of GDP, 1970–2004 (%)



Source: *World Development Indicators 2005 and Annual Economic Report (2005)*.

What is most striking about Figure 8 is the sharp decline in 1992 to close to zero per cent and the further decline to negative values in 2000. With data on household saving and disposable income, we would have been able to see if household savings as a share disposable income behaved in a similar way, which would be a likely consequence of HIV/AIDS. Since these are not available, we looked at household consumption as a share of GDP. There was a rise in the share of household consumption during the 1990s, which indicates that the decline in domestic saving at least is consistent with the spread of the pandemic.

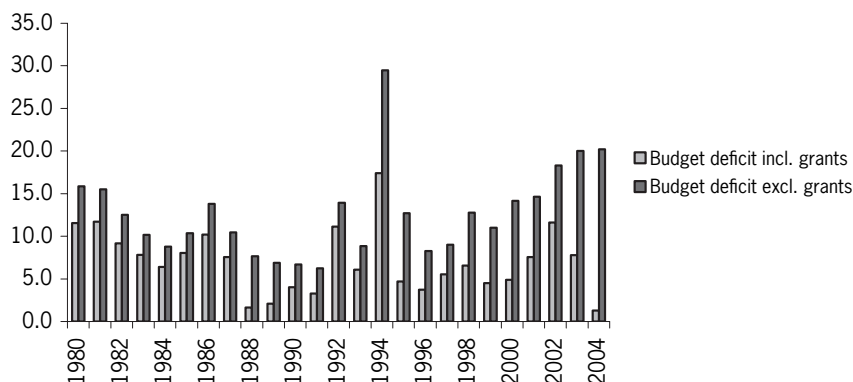
Nevertheless, according to the World Bank (1997), large budget deficits explain the low rates of domestic saving in Malawi during the 1980s and the 1990s. The World Bank further claims that the decline in 1992 was due to a shift towards increased domestic financing of the deficit that crowded out private sector saving. Malawi's long history of government overspending is depicted by Figure 9, which shows fiscal deficits, with and without grants, between 1980/81 and 2004/05. There

⁷⁰ Investment is mainly financed with earnings in sub-Saharan Africa (Bigsten et al. 1999). Hence, one explanation for the large share of dividends in net profits is probably the low rate of investment.

⁷¹ The data on saving varies somewhat depending on the source. Those in Figure 7 are from the World Bank Development Indicators. According to data reported in Annual Economic Report (2005), domestic saving was small but positive during 2000 and 2001.

was an increase in the deficit in 1992, coinciding with the decline in domestic saving, and the deficits remained high during the rest of the decade. The spike in 1994 is due to excessive spending by the government in power before the first democratic elections.

Figure 9: Fiscal Deficits as a Share of GDP 1980–2004 (Per cent)



Note: 1980 is for the fiscal year 1980/81, and so on. The data for 2004/05 is preliminary.

Source: World Bank Africa Database (2004) for 1988–2001 and IMF (2005) for 2002–2004.

The negative saving rates during the period 2000–2004 can probably be explained by public sector borrowing, which increased rapidly during this period (see Whitworth, 2004). Public sector borrowing is mainly financed with government Treasury bills, which had an average yearly real return of 20 per cent during this period while bank deposits paid only nine per cent.⁷² Hence, Treasury bills were attractive for investors. As a result, private sector savings were channelled to the public sector, creating the negative domestic saving rates. In Chapter 4, we discuss the impact of HIV/AIDS on the public sector finances in some detail.

In an open economy, funds can be sourced in the international capital market, or there might be capital inflows or transfers from abroad. Hence, in a country like Malawi, foreign direct investment (FDI) and foreign aid can be expected to influence investment. In fact, one of the purposes of foreign aid is to reduce, or do away with, the so-called savings gap by providing finance for investment.

Malawi receives small amounts of FDI. It received on average about one per cent of GDP per year between 2000 and 2003, but the amounts were even smaller in the 1990s (0.5 per cent during the period 1990–1999) (World Bank, 2005). Hence, there is no evidence that the epidemic has reduced FDI so far; it has always been low. In any case, since FDI has grown marginally in recent years, it does not explain the decline in investments.

A more important inflow is foreign aid. Official development assistance rose rapidly during the 1980s, peaked at US\$578 million in 1992 and has since hovered between US\$400 million and US\$500 million per year (World Bank Africa Database, 2004; IMF, 2005). Evidently, the period of large inflows, 1992–2003, coincided with the period of low domestic saving. Hence, foreign aid does not seem to have been used to enhance productive capacity in the form of investments during the last 15 years. IMF (2001a) also draws this conclusion.

⁷² The interest rates are from the IFS database of the IMF. Real interest rates were calculated as the nominal rate minus inflation.

Net capital inflows are influenced by the size of the foreign debt, debt service, and by debt forgiveness such as the HIPC (Heavily Indebted Poor Countries) initiative. Table 6 reports indicators of the debt situation split up into different time periods. It shows the rapid and continuous growth of Malawi's foreign debt during the period 1970–2003; it was on average US\$293 million 1970–79 and reached US\$3129 million in mid-2005 according to the most recent data (Reserve Bank of Malawi, 2005). It also shows that debt service in per cent of GNI and exports rose drastically during the 1980s, averaging nine per cent of GNI and 35 per cent of exports. These ratios declined significantly during the 1990s. During 2001–2003 they were two per cent of GNI and 7.3 per cent of exports, respectively. The explanation for this decline is mainly reduced debt service in per cent of total debt, reported in the bottom line; it was ten per cent during the 1980s and 1.2 per cent 2001–2003.

Table 6. Foreign Debt and Debt Service

	1970– 1979	1980– 1989	1990– 1994	1995– 2000	2001– 2003
Deb in current million US	293	1060	1757	2449	2760
Debt service% of GNI	2.7	9.0	6.0	4.7	2.0
Debt service in% of exports	15.9*	35.2	24.7	15.9	7.3
Debt service in% of total debt	5.4	10.3	6.2	3.5	1.2

Source: World Bank Development Indicators 2005 and World Market Analysis

* 1977–1979

The reduction in debt service is due to debt cancellation, in particular the enhancement of the HIPC Initiative in 2000. The enhancement made Malawi eligible for debt relief. The HIPC Initiative reduces debt service by US\$45 million per year from 2001 and onwards. Despite this, external debt sustainability continues to be a serious concern (IMF and World Bank, 2000; IMF, 2005). However, if Malawi reaches the HIPC completion point as expected in 2006, and consequently becomes eligible for the debt relief under the recent G-8 initiative, debt sustainability will definitely be achieved. This is because the plan is to cancel 100 per cent of poor countries' debt owed to the multilaterals, i.e. the World Bank, the IMF and the African Development Bank, and over 90 per cent of Malawi's debt is owed to the above mentioned institutions.

Economic growth is generally believed to be hampered by high debt service. Nonetheless, it is difficult to believe that external debt exercised a stronger negative effect on private investments after Malawi was granted debt relief under HIPC in 2001 than in the 1990s. Hence, there is no clear negative link between the evolution of the private sector investment rate and debt service during the last 15 years. However, the G-8 debt cancellation has the potential to lead to a significant increase public investment.

3.1.2.2 Labour Supply and the Demographic Transition

Since HIV/AIDS mainly affects the working-age population, it has a strong impact on the labour force. The direct effect is that the labour force gets smaller than what it would have been without the epidemic. According to ILO sources, about 850 000 members of the Malawi labour force had been lost in 2005. By 2015, approximately two million

working-age people will have died of AIDS, according to the ILO. However, if Malawi's target for the rollout of ARVs is achieved, these numbers may become much smaller.

In simple economic models, a decrease in population growth leads to a higher level of income per capita and higher wages because there is more capital per worker. However, the HIV/AIDS epidemic affects human capital, and if the supply of skilled workers is affected more than unskilled workers, average real wages might decline. We do not have data on real wages to show what is happening. However, the HIV Sentinel Surveillance 2003 shows a bias in prevalence among pregnant women towards those with higher education and those who are married with professionals (see Table 15 and 16 in NAC, 2003). It is also the case that HIV/AIDS is more common in urban than in rural areas, and the level of education is higher in urban areas. Moreover, since skilled workers in Malawi are much more likely to work full time than unskilled workers, the HIV prevalence among skilled workers does not have to be higher than for unskilled in the general population for there to be a negative effect on average labour productivity.

HIV/AIDS-related morbidity and death is also likely to decrease the efficiency of the labour force in other ways, and thereby exercise an effect on wages. For instance, as we discussed in Chapter 2, those who are not infected have to reallocate their time from productive activities to participate in funerals, take care of sick people, etc. And beyond the measurable, the emotional state of workers is also affected by the number of deaths and sick people in their surroundings, which in turn could have an impact on the productivity and working morale.

The impact on real wages also depends on how demand for labour reacts to HIV/AIDS. Since there might be an overall decrease in consumption in the economy, the demand for labour might decline. Dorward and Mwale (2005) analyse the impact of HIV/AIDS on labour supply and demand in rural Malawi. They find that morbidity and mortality among skilled workers are likely to lead to a reduction in demand for both on-farm labour and for unskilled labour providing goods and services within the community. This reduction in the demand for unskilled labour is likely to exceed the reduction in supply, leading to a decline in unskilled wages in rural areas.

The impact on real wages is important not only for the incomes of the survivors, but also for population dynamics. This is because it affects fertility, which in turn has a strong long-run impact on income levels. Malawi has had rapid population growth since its entrance into the second phase of the demographic transition,⁷³ during which death rates declined and birth rates continued to be high. This caused a rapid increase in labour supply during the last 30 years; it expanded from two million in 1965 to 5.3 million in 2004. Another consequence of the demographic transition is that the number of children is growing faster than the number of adults, reflected in an increasing dependency ratio (defined as the population aged 0–14 and 65+ in relation to those aged 15–64). The dependency ratio in Malawi increased from 0.93 in 1965 to 1.00 in 1985. It then started to decline and reached 0.91 in 1995. However, due to AIDS it has now risen to 1.01, indicating that there is one dependent for every person at a working age (UN Population Division, 2005). The dependency burden affects GDP in various ways. For in-

⁷³ Most textbooks in development economics describe the theory of demographic transition in detail. see for instance Todaro (2000).

stance, adults can do more market work when there are few children per adult. The change in the dependency ratio can thus to some extent explain the recent growth in TFP, though the timing is not entirely satisfactory.

The future evolution of the dependency ratio depends mainly on fertility. According to UN projections, which incorporate HIV/AIDS and ART, it will stay around 1.00 until 2015 if fertility remains constant and decline to about 0.9 if fertility declines from six to 4.8, which is the most optimistic scenario. This means that in Malawi high dependency ratios will most probably continue to affect per-capita income growth negatively.

3.1.2.3 Human Capital

Human capital refers to the quality of workers. It is usually divided up into health, or physical working capacity, and education. HIV and AIDS influence both types of human capital. Although it is difficult to measure human capital, there are indicators that provide an idea of how they evolve over time. In this sub-section, we report on some of these indicators.

HIV/AIDS affects the health of workers directly. In 2003, about 60 000 Malawian adults passed away due to AIDS and practically all had prolonged periods of illness before death (NAC, 2004). Moreover, there are about 800 000 HIV positive right now and a significant portion of them are in bad health. Furthermore, since HIV/AIDS weakens the immune system, many contract other diseases and these may spread among the general population. Deteriorating health reduces labour productivity, which shows up in slower TFP growth in our model. Although we do not have an overall measure of the decline in health, or how it has affected the stock of human capital, there is no doubt that the impact of the epidemic has been substantial.

The most common approach to measuring human capital is to use data on schooling alone. This is because since health is hard to quantify. However, it is not sufficient to look at school enrolment, since it is the stock of knowledge that is of interest. Recently, an effort has been put into the construction of new data sets that show the level of education in the working-age population, and some of these data for Malawi are reported in Table 7 for the period 1960–2000. The measures are for educational attainments. They show the average years of schooling, the percentage of the adults who have no formal education at all, and those that have attended primary, secondary or tertiary education.

Since the 1960s, the average years of schooling have increased from 1.7 to 2.6 for those aged 25 and over, and from 1.9 to 3.2 for those aged 15 and over. During the same period the percentage without schooling for the two groups declined from 67 to 54 per cent and 64 to 41 per cent, respectively. Moreover, the data for the highest level attained shows similar improvements. Thus, according to these data, there has been educational progress, though modest, which should be reflected in an increasing stock of human capital.

Table 7: Trends in Educational Attainment

	1960	1965	1970	1975	1980	1985	1990	1995	2000
Average Years of Schooling									
Aged 25 and over	1.70	1.66	1.60	2.22	2.41	2.60	2.58	2.60	2.58
Aged 15 and over	1.91	2.01	1.90	2.54	2.68	2.84	2.71	2.70	3.20
No Schooling (in percent)									
Aged 25 and over	67.1	67.5	68.0	55.4	56.9	55.0	54.6	53.5	53.6
Aged 15 and over	63.6	61.2	62.5	49.9	51.8	49.5	50.4	50.7	40.7
Highest Level Attained, Aged 25 and Over (in percent)									
Primary Total	32.5	32.1	31.5	42.0	40.4	39.8	40.5	41.8	41.9
Secondary Total	0.4	0.4	0.5	2.5	2.4	4.8	4.5	4.2	4.0
Post-Secondary Total	0.0	0.0	0.0	0.2	0.3	0.4	0.4	0.5	0.6

Notes: The source is the database compiled by Barro and Lee (2000). The Highest Level Attained shows some schooling at the indicated level. The values for 2000 are projected.

The interesting question is how HIV/AIDS has affected the level of educational attainment and its future course. One concern is that when calculating the measures of educational attainment, there is a need for information on age-specific death rates for different educational levels, but such data are not available. Consequently, only age-specific death rates were used. This probably created a bias for a country such as Malawi, since death rates among well-educated people in the overall population is likely to have increased more than among uneducated people because of the high HIV prevalence. Hence, Table 7 overestimates the increase in educational attainment.

Another concern is that all the gains since 1995 were achieved by those aged 15 and over, not those aged 25 and over. In fact, the improvement occurred during the period 1995–2000, and was the result of introduction of free primary education in 1994. A consequence of this is that much of the increase in educational attainment might be eroded by the current high death rates among relatively young people. Yet another issue is how HIV/AIDS affects the quality of education. This is discussed in section 4.4.3.

The epidemic also influences human capital formation through the intergenerational transfer of human capital. In Malawi, where the majority of the labour force works in subsistence farming, the middle generation's role in the knowledge transfer of farming practices is probably as important as formal education. Mtika (2003) explores how transfers of this sort of knowledge, which he calls “embodied capital”, are affected by HIV/AIDS in Malawi.⁷⁴ He concludes that prime age adults are crucial for intergenerational (between parents and children) and generational (between siblings) resource transfers, and the magnitude of such transfers are in turn dependent on the health status of the individual. Hence, the long run impact on the productivity of human capital is likely to be much greater than it appears if one only considers

⁷⁴ Mtika (2003) describes embodied capital investments as: “the allocation of time and other resources (including monetary transfers) to current and future biological, social and economic reproduction, for the purpose of ensuring dynastic fitness and continuity”.

educational attainment. Bell et al, (2004) make a similar argument in their study of South Africa.

To sum up, there is every reason to believe that the overall impact of HIV/AIDS on human capital formation is strongly negative, but it is difficult to determine how human capital has affected economic growth.

3.1.2.4 Total Factor Productivity Growth and Market Deregulation

The data we have reported on human capital, both in the form of health and education, indicate there was some improvement in educational attainment at the end of the 1990s but hardly any improvement in health. There is thus no reason to believe that the rise in TFP in the mid 1990s was due to an increase in human capital.

The direct explanation for the increase in TFP is the decline in the capital-labour ratio, as shown by Figure 6. Hence, it could be that unproductive capital was scrapped, possibly due to an increase in competition as imports increased following the removal of trade barriers in the beginning of the 1990s. Another potential explanation is the rapid progress in the liberalisation of international and domestic trade that took place during this period, where particularly the agricultural sector responded strongly.

The process of trade liberalisation started in 1988 when exchange controls were relaxed somewhat and the maximum import tariff was reduced from 70 percent to 45 percent. In 1991–1993, there was another round of liberalisation, with a reduction in the coverage of non-tariff import controls and streamlining of import taxes. During the period 1994 to 1999, the process went quicker and all import and export licensing requirements were abolished except for certain goods related to health, security or environment. Also, the maximum tariff was reduced to 25 percent.

There was also a rapid deregulation of the agricultural sector during the 1990s. By 1996 marketing liberalisation of smallholder crops and inputs was completed, and prices of all crops except maize were market determined (see Chirwa, 1998). This implied that policies favouring the estates were terminated and smallholders moved quickly into cash crop production, in particular burley tobacco. As a result, there was a rapid expansion and diversification in smallholder production (World Bank, 1997).

Trade liberalisation seems to have induced two large changes in Malawi's economic structure that are likely to have affected TFP during the 1990s. Over the period 1960–1992, industry's share of GDP grew continuously from well below ten per cent to 21 per cent. However, with the intensification of trade liberalisation, a decline started. By 2004, the share was 11 per cent. At the same time, smallholder agriculture expanded, while large scale farming stagnated; the share of small scale agriculture rose from slightly over 20 per cent in the beginning of the 1990 to about 30 per cent in 1999 (Annual Economic Report, various issues). It seems reasonable that these two structural changes determined the course of TFP during the 1990s and they swamped the negative effects of HIV/AIDS. A consequence of this is that the rapid increase in TFP was a one-time change. Another is that the prospects for future growth are bleak. The slow TFP growth between 1998 and 2003 supports this conclusion.

3.2 Scenarios for Per Capita GDP in 2015

In this section, we use the data reported above and projections on demographic variables to illustrate various paths that GDP per capita

might follow during the period 2005–2015. Although these paths are scenarios, not predictions of the future, they provide some interesting information. For instance, economic growth during the next 10 years influences the amount of resources that are available for health care and the chances of meeting the Millennium Development Goals. Moreover, the simulations constitute benchmarks of future economic growth that can be used when discussing major structural and behavioural changes related to HIV/AIDS.

In the analysis, future growth rates are determined by the past history of some variables and reasonable assumptions about the values of some parameters. However, it is important to note that the future impact of HIV/AIDS on income per capita is determined by factors such as people's coping mechanisms, the quality of institutions, and social capital, among other things. We assume these factors will remain more or less constant up to 2015. Chapter 5 discusses scenarios for responses to HIV/AIDS after 2015 in detail.

The diverging results in previous macroeconomic studies are mainly due to assumptions about relative strengths of different mechanisms (see Nattrass, 2002; Barnett and Whiteside, 2002). Since we have little knowledge about exactly how HIV/AIDS affects economic growth in Malawi, we make no attempt to model these. Instead, we assume that the epidemic has already led to significant changes in the Malawi economy. This means that we cannot look at scenarios with and without HIV/AIDS but only the future growth rates under different more or less realistic assumptions.

To antiretroviral therapy is incorporated (see UN Population Division, 2005). calculate the scenarios, we used the same function as in the previous section (see Footnote 68). Data on population and labour force growth come from the UN Revision of World Population Prospects 2004. In these projections, the impact of HIV/AIDS on mortality is modelled explicitly and treatment with

There are three parameters in the model that have a major impact on the outcomes: the investment ratio, total factor productivity growth, and fertility. We report results from simulations with combinations of these parameters, when they are as favourable as possible and the worst combination. For each case, we report the outcomes when there is no change in fertility and when it declines significantly. In the good-case scenario, gross capital formation is 25 per cent of GDP. This is very high, but it was achieved in the 1970s and in 1994. According to the World Bank Economic Growth Study (1997), this is the investment ratio required for achieving six per cent growth and a reduction in poverty. Total factor productivity growth is assumed to be six per cent. This is high by international standards and compared to Malawi's past experience, but during the latter half of the 1990s, TFP grew by roughly six per cent per year.

In the bad-case scenario, we assume that the investment ratio is 10 per cent, TFP-growth is zero, and that there is no decline in fertility. The values for the investment ratio and TFP-growth correspond roughly to those observed for the period 2000–20004. The assumption of ten per cent investment ratio is a bit pessimistic, since recent low levels of investment can be partly explained by high real interest rates. However, there might be a strong HIV/AIDS component that will keep investments low in the future (see McPherson, 2003, for a general discussion). The assumption of zero TFP growth might, on the other hand, be too optimistic. TFP captures various factors here such as human capital, which is being eroded by HIV/AIDS. Hence, there is a strong possibility of a

sharp decline in TFP, as implied by the discussion in Chapter 5.

Total fertility is assumed to either follow the low variant in UN Population Prospects, which means that it will decline from 6.1 in 2000 to 4.8 during the period 2010–2015, or continue at the same level as in 2000. In Young's (2005) study on AIDS in South Africa, it is the decline in fertility, due to rising real wages, that generates his prediction of future high per-capita GDP growth. The economics behind the assumption of no decline in fertility is that the increase in adult mortality induces families to have more children and that real wages decrease.

Table 8 reports the results in the form of indices for GDP per capita over the period 2000–2015. The year 2000 is set to unity for ease of comparison. In the bad scenario with constant fertility, per capita GDP shrinks by 17 percent to 2015. If we assume that there is a decline in fertility, the negative impact is reduced to minus 12 per cent. In the good case with low fertility, GDP per capita increases by ten per cent between 2000 and 2015. Although we call this the good case, a ten per cent increase is a modest improvement and far from sufficient to reduce poverty. In fact, poverty is likely to increase due to the unequal distribution of income.

The level of fertility mainly affects the evolution of income per capita through its impact on the dependency ratio. In the constant fertility case the dependency ratio remains at about 1.00 during the whole period, while it declines from 1.00 to 0.9 in the low fertility case. Since the growth-enhancing effect of HIV/AIDS in Young (2005) comes from the decrease in fertility, it is interesting to speculate what would happen if fertility drops sharply to, let us say, 3.5 children per woman. Although we have not made such calculations, a rough estimate based on Table 8 is that we can add about five percentage points to the 2015 values in each case. Hence, even in the case of a sharp drop in fertility, per capita income is unlikely to grow by more than 15 per cent over the next 10 years.

Table 8: Indices for GDP Per Capita 2000–2015 (2000=1)

Year	Bad Scenario		Good Scenario	
	Constant Fertility	Low Fertility	Constant Fertility	Low Fertility
2000	1.00	1.00	1.00	1.00
2005	0.92	0.92	1.00	1.00
2010	0.87	0.89	1.03	1.05
2015	0.83	0.88	1.05	1.10

Note: In the Good Scenario: gross fixed capital formation = 25 per cent of GDP; TFP growth = 6 per cent; total fertility declines from 6.1 to 4.8. Bad Scenario: gross fixed capital formation = 10 per cent; TFP-growth = 0; fertility constant. The annual rate of depreciation of the capital stock is 4 per cent.

3.3 Agriculture and Manufacturing

This section discusses how HIV/AIDS affects the agriculture and manufacturing sectors, which together make up the major part of the private sector in Malawi. The first sub-section deals with small-scale agriculture and commercial agriculture, including fisheries. The second sub-section focuses on the manufacturing sector.

3.3.1 The Agriculture Sector

Agriculture is the backbone of the Malawi economy and shapes the livelihoods of more than 80 per cent of the population (NSO, 1998). In 2004, agriculture contributed to close to 40 per cent of GDP and accounted for 90 per cent of Malawi's export earnings. Tobacco is by far the most important export commodity. Agriculture also supplies more than 65 per cent of the manufacturing sector's raw material requirements (MoA, 2005).

The agricultural sector is divided into two main sub-sectors, a large-scale commercial agriculture sector, which includes fisheries and forestry, and a smallholder sector. In 2004, the share of commercial agriculture in GDP was close to nine per cent and the share of small-scale agriculture was about 30 per cent. The most important crops in large-scale farming are tobacco, tea, sugar, and coffee, while smallholders produce maize, cassava, sweet potatoes, groundnuts, and tobacco, among other crops.⁷⁵

The total area cultivated for the past five years has been on average about 2.7 million hectares (ha), of which one million ha is held in some 30 000 estates with farm sizes ranging between 10 ha and 500 ha. Smallholders of average farm sizes of about 1 ha cultivate the remainder, 1.7 million ha. However, inequalities with regards to landholding sizes are substantial, and about three per cent of all households (some 75 000) are landless. Furthermore, as many as 56 per cent of all smallholders have farm sizes of less than 1 ha, and up to 40 per cent cultivate less than 0.5 ha (Bollinger et al., 1999; Gladwin et al., 2001).

Despite the size and importance of the agriculture sector, food insecurity, famine and malnutrition have continued to be major concerns. This is because in Malawi, agriculture mostly depends on a single (unimodal) rainfall, which is characterised by marked year-to-year fluctuations in combination with recurrent drought. In addition, the total irrigated area is only about 28 000 ha, compared to a potential of up to 0.5 million ha (MoA, 2005).

3.3.2 Impact of HIV/AIDS on the Agriculture Sector

It is widely accepted that the agriculture sector is greatly affected by HIV/AIDS and that it will be so for many years to come. However, it still remains a challenge to understand the impact of the epidemic and its magnitude on production. In a recent report, the Government of Malawi recognizes the severity of HIV/AIDS, which is identified as one of four key development issues underlying the low productivity and profitability of Malawi's agriculture (MoA, 2005).⁷⁶ In response to this situation, the Government has formulated an HIV/AIDS policy and strategy for the agriculture sector for the period 2003–2008 (MoA, 2003).

The dependence on the agriculture sector, which is highly labour-intensive, makes Malawi very vulnerable to the impact of HIV/AIDS. According to Gillespie (1988), the sensitivity of agriculture due to AIDS-related labour losses depends on: the seasonality of the demand for labour; the degree of specialisation by sex and age; the interdependence of labour inputs; economies of scale in labour; and the substitutability of labour-saving technologies. All of these aspects are relevant for the Malawian agriculture sector.

⁷⁵ The repeal of the Special Crops Act in 1995 made it possible for smallholder farmers to grow high value cash crops such as burley tobacco. This increased tobacco production among smallholders tremendously.

⁷⁶ The remaining three issues are: (i) low irrigation development and poor water management, (ii) weak extension services, and (iii) inadequate markets (MoA, 2005).

Agricultural production is directly affected by the loss of labour, but the losses of knowledge and the weakened institutions due to HIV/AIDS also affect both smallholder and commercial agriculture (FAO, 2005; GoM, 2002). All this affects the level of production, relative costs of inputs, farming systems, and technological and institutional changes (IFPRI, 2002; Bota et al., 2001).

One example of how human capital loss is affecting agricultural production is the acute shortage of agricultural extension officers in the Ministry of Agriculture. Out of a total of 2500 agriculture extension sections, 48 per cent have no staff to provide services to farming communities or undertake agricultural data collection, some of the main responsibilities of this professional group (MoA, 2003; Bryceson et al., 2004). Currently, there is a need for 3000 new employees to fill all the established posts in the Ministry (Government of Malawi, 2005). This situation is caused both by high levels of attrition, which are mostly due to staff members' deaths from AIDS, and slow recruitment of agricultural extension officers (see also Chapter 4).

3.3.3 Impact of HIV/AIDS on Smallholder Agriculture

Subsistence agriculture is the main source of income for the rural poor, accounting for about 63 per cent of income (GoM, 2002).⁷⁷ In the rural areas, more females (94%) are engaged in subsistence farming than men (76.8%) (NSO, 1998). Smallholder agriculture is largely based on the production of maize. This is the dominant food staple crop, accounting for 70 per cent of farmed land (National Economic Council, 2001).⁷⁸ Other key crops grown by smallholders are cassava and sweet potatoes and cash crops such as tobacco and cotton. Value added in small-scale agriculture varies tremendously from year to year, and although there was a rapid expansion in the mid-1990s, its long-run growth has been disappointing. Value added only grew by 4.3 per cent 1981–1995, which was far below population growth in the rural areas. Its recent performance was even worse: value added increased by 1.5 per cent between 2000 and 2004 and it is estimated to have decreased by 7.4 per cent in 2005.

Smallholder agriculture is characterized by low productivity and the intensive use of labour; many workers still use hand-held hoes as the main source of power. Major constraints in the development of smallholder agriculture are limited access to productive assets, such as small landholding sizes, and not having enough income to buy proper inputs to production, which leads to low productivity and profitability (Ellis et al., 2003; Bryceson and Fonseca, 2005).

Moreover, there are large seasonal variations in demand, and many hands are needed in the production during planting and harvesting seasons. In such an environment, loss of labour from HIV/AIDS impacts directly on production, at least in the short to medium run. This implies that fields cannot be worked, goods cannot be transported to wider markets, and farmers do not have enough food to feed their families, who become malnourished (Pinder, 2004; Shah et al., 2002; Ngwira et al., 2001).

According to previous research, a common method for coping with labour shortages due to AIDS is to switch from labour-intensive to less labour-intensive crops. This in turn brings about important changes in farming systems. Hence, labour-intensive cash crops such as tobacco,

⁷⁷ The major source of cash income for Malawian households, however, was wage income, which contributed about 13.0 per cent of income for the rural poor (GoM, 2002).

⁷⁸ Maize is also the dominant diet, accounting for roughly 65 per cent of calorie intake.

Irish potatoes, groundnuts, and rice are abandoned in favour of pulses, cassava, and other tuber crops (Shah et al., 2002; Bota et al., 2001). In particular, a large number of studies have proposed that cash crops, as well as those crops requiring expensive inputs, may be dropped as a response to prime-age adult death. Cash crops such as coffee or Irish potatoes are generally labour intensive. Accordingly, they might be the first to be abandoned due to HIV/AIDS labour shortages within the household (Bollinger et al., 1999; Shah et al., 2002).

In a recent study, Mather et al. (2004) found that three-quarters of the investigated households changed their usual crop mix towards less labour-intensive crops (e.g., cassava) in response to labour shortages and a lack of resources to obtain agricultural inputs. Mather et al. (2004) also assessed whether affected households that face agricultural labour constraints have lower total cultivated land areas and cultivation rates (cultivated area as a proportion of total area) than non-affected households. Their findings show that the mean area cultivated after death was only slightly lower among households experiencing a prime-age adult death.⁷⁹ Analysing per-capita area cultivated after a prime-age adult death, they also found that land/labour ratios of many affected households were similar to those of non-affected households. This was because many affected households (on average) had more prime-age adults and a larger household size before experiencing a prime-age adult death than non-affected households, or that they attracted new adults afterwards (see also Section 2.2.1 in Chapter 2). However, over time, the largest difference between these two household types appeared to be that HIV/AIDS leads to impoverishment of affected households, which usually results in less available assets and less money to buy inputs such as fertilizers.

Moreover, according to Bota et al. (2001) the decision to change agricultural practices to save labour also results in a decrease of both agricultural production and productivity. This finding is supported by Mather et al. (2004), who showed that affected households mean crop incomes after a prime-age adult death are lower than in non-affected households across four of their investigated countries (except for Zambia).⁸⁰ This difference was even more pronounced in a household experiencing a head of the household death. In the case of Malawi, those households earned MK 17 500 (US\$170) compared with MK 29 400 (US\$280) in a non-affected household. In sum, even if an AIDS-affected household that has lost a prime-age adult is able to cultivate an area of land approximately equal in size to one cultivated by a non-affected household, the disease is likely to have an adverse effect on the household's production capacity.

Table 9 below is based on a large amount of data from household surveys collected during emergency food security assessments in Malawi, Zambia, and Zimbabwe in August and December 2002 by the national Vulnerability Assessment Committees (SADC, 2003). It shows the percentage difference in crop production in the three countries according to whether there was at least one 'active adult' in the household. In this data set, an active adult was a proxy variable for measuring the impact of HIV/AIDS related deaths on prime age adults, as it did not allow the analysis to include natural old age and child death. A house-

⁷⁹ This was true also in Mozambique, Rwanda and Kenya. The only exception was Zambia. Results from impact analysis in Kenya and Mozambique demonstrated that the effects of prime-age death on total land cultivated were sensitive to the gender and household position of the deceased (Mather et al., 2004).

⁸⁰ The countries included in the study were Kenya, Malawi, Mozambique, Rwanda and Zambia.

hold in Malawi without an active adult has 51 per cent lower cash crop income than a household that has at least one active adult. It is also evident from the results that the impact on cash-crop incomes is much larger than in the tuber production. This is probably due to the gender division of labour discussed earlier, since primarily men grow cash crops. Hence, if the man dies, the woman does not have the required knowledge to take over or pass this knowledge on to her children and that production will be lost. For instance, there is some evidence that smallholders stop cultivating tobacco when the man dies (Shah et al., 2002). Overall, negative effects on production and incomes are seen in all three countries that lacked an active adult (SADC, 2003).

Table 9: Difference in Crop Production for Households with no Active Adult (Per cent)

	Cash Crop Income	Tuber production (kg)	Cereal production (kg)
Malawi	-51	-26	-53
Zambia	-85	-69	-57
Zimbabwe	-77	*	-24

Note: *No statistically valid case. Source: SADC, 2003.

Furthermore, the data from Zambia showed some interesting features when disaggregated by wealth group.⁸¹ In particular, chronic illness appears to make much less difference on the area planted amongst the well-off households compared to the poor households. That is, well-off households with a chronically ill head had three per cent less area cultivated, while this difference increased to 69 per cent less for households in the poor wealth group. The data from Zambia further showed that when the chronically ill adult was the head of the household, the cropping proportions are cash (5%), cereal (42%), and tuber crops (53%), compared with the general distribution of cropping pattern for the entire December data set as: cash (14%), cereal (58%), and tubers (28%).⁸² These results indicate that greater stress on household resources leads to a remarkable drop in cereal crops while the proportion of tubers increases. This pattern was further expected to be affected by the fact that tuber production is generally less labour intensive, more labour flexible, and requires less capital input than cash and cereal crops.

In sum, research on Malawi and other sub-Saharan countries shows that AIDS related mortality may lead to changes in the farming households' crop mixes. In particular, households with a chronically ill household head generally rely less on cash crops, which may further reduce the available household income. However, this effect is hard to detect at an aggregate level in Malawi, possibly because there are many variables apart from HIV/AIDS affecting a farmers' decision to grow one crop rather than another.

3.3.4 Impact of HIV/AIDS on Commercial Agriculture

HIV/AIDS has serious consequences for the commercial agricultural sector. It affects operations directly by reducing workers' health, thus lowering labour productivity. This effect is likely to be strong in commer-

⁸¹ Wealth groups did not disaggregate the data on Malawi.

⁸² One commonly grown tuber crop is cassava.

cial agriculture since work is physically demanding. Moreover, HIV/AIDS leads to increased days of absenteeism because of illness or attendance at funerals (Parry, 2000). There exists anecdotal evidence that funerals lead to particularly large losses of workdays on commercial farms, since workers have close relations with many people living in the surrounding area. Indirect costs are also incurred in recruiting replacements for deceased employees.

There are reasons to believe that commercial farms suffer more than many other industries from HIV/AIDS, since prevalence tends to be high among farm workers (e.g., Nwanyanwu et al., 1997). This is because the estates have high seasonal demands for labour, which makes workers travel considerable distances to find employment.⁸³ Moreover, few estates provide married quarters. This leads to a concentration of single men separated from their families for long periods of time and with a proximity to temporary sexual partners in villages located close to the estates (Ngwira et al., 2001; Frankenberger et al., 2003).

We have not found any study that addresses the consequences of HIV/AIDS on the commercial agriculture as a sector. However, Jones (1996) evaluated the costs associated with workers who were HIV positive and with those who died of AIDS on a tea estate in Malawi (see also Subsection 3.5.2 below). His results showed that the largest impact of HIV/AIDS on costs and profits was the loss of skilled workers. This finding highlights the key role skilled workers may have in labour-intensive production processes.

Fisheries is an important industry sub-sector within commercial agriculture; it employs over 50 000 fishermen and 300 000 people in fish processing and marketing. (MEPD, 2005). Many of those who work in fisheries have been found to be very susceptible to HIV/AIDS-infection. This stems from a range of factors: fishermen live away from their families for several months at a time; their occupation involves extensive mobility; their cash earnings can support a number of temporary sexual partners; and, finally, their partners as well as their wives may be engaged in other sexual relationships (Simon-Meyer, 2002; Hemrich and Schneider, 1997).

Women in Law in Southern Africa (WLSA) carried out a study on the fisheries industry in Nkhota-kota along Lake Malawi from a woman's perspective. The study found that 'fish-for-sex' transactions were common, especially during the low fishing season. In these transactions, women trade sex to be given the 'favour' to buy fish in fish markets. Since the use of condoms is rare in the transactional sex industry and since most fishermen have between six and eight 'girlfriends', the markets are key channels for HIV transmission. Their mere existence leaves a large number of women extremely vulnerable to HIV infection (White et al., 2004).

Summing up, the impact of HIV/AIDS on the agricultural sector is repeatedly pointed out as a major detriment to production by depleting the sector of labour and human capital. Even though this is visible in villages and on farms, the effects of HIV/AIDS are hard to isolate from other factors at the aggregate level. One explanation could be that the number of adults per unit of land is increasing in spite of the epidemic, so in many cases it might be possible to replace lost workers. However, there is a paucity of good data, and so far most research has focussed on the impact HIV/AIDS in a small number of villages.

⁸³ The tea industry, the largest employer in the private sector, hires about 170 000 workers in the peak season in Thyolo District (Jones, 1996).

3.3.5 Impact of HIV/AIDS on the Manufacturing Sector

The manufacturing sector is a source of employment for about two per cent of the economically active population (aged ten or older), but its contribution to GDP is as large as about ten per cent (NSO, 2005).⁸⁴ However, the sector's share of the economy, as well as level of production, has declined steadily since the early 1990s, when it was about 17 per cent of GDP.

The manufacturing sector in Malawi faces a number of constraints, partly due to the fact that Malawi is a landlocked country. Some of the major ones include utility interruptions, high transportation costs, and high costs for imported inputs. In addition, it is highly dependent on agriculture as a source of raw materials and provider of foreign exchange for the importation of inputs and components (GoM, 2002).

Table 10 illustrates the recent performance of the manufacturing sector. It reports the index of industrial production for the two major sub-sectors Food, Beverages and Tobacco and Clothing, Footwear and Textiles, as well as the index for all consumer goods for selected years between 1992 and 2004. The downward spiral is clearly visible. The first and second columns show that production declined by about 50 over the twelve-year period in both sub-sectors. The third column shows that the index for all consumer goods went from 100 in 1992 to 48 in 2004.

Table 10: Indexes of Manufactured Goods (Selected Years, 1992=100)

Year	Food, Beverages and Tobacco	Clothing, Footwear and Textiles	Total Consumer Goods
1992	100	100	100
1995	98	57	88
2000	48	78	63
2004	47	52	48

Source: NSO, *Statistical Yearbook* (various issues)

The impact of HIV/AIDS on manufacturing companies is determined by a number of factors and may vary considerably between companies. For instance, manufacturing firms are more or less labour-intensive or capital-intensive, have varying sizes, and are accordingly more or less exposed to the impact of HIV/AIDS. Labour-intensive firms, on the one hand, are primarily faced with the problems of higher turnover in the labour force and increased medical and other labour benefit expenses. Capital-intensive companies, on the other hand, typically rely more on the experience and knowledge of a few key personnel (Isaksen et al., 2002).

Similar to many other sectors, HIV/AIDS infection amongst the personnel in manufacturing firms may influence productivity and staff morale negatively. Low productivity will primarily be experienced in a situation where the infected employee is not on ARV therapy and during the last stages of the disease. Illness and death of colleagues, increased workloads, potential stigma, and discrimination may also undermine the morale and lead to a lowered productivity.

Manufacturing firms that do not exploit natural resources and have a distant ownership are generally very mobile. This may lead manufactur-

⁸⁴ The number of economically active people (aged ten years and over) in manufacturing is 118 483. The majority of these people can be found in the rural areas (73 278 people, and 45 205 people in urban areas) (NSO, 1998).

ing companies to move away or refrain from placing their production in a country such as Malawi that has a high prevalence of HIV. No example of this is found for Malawi, but there is a Taiwanese clothing manufacturer that planned to establish a factory with 5 000 workers in Swaziland (Isaksen et al., 2002). In the end, the company decided to set it up in Lesotho instead because of the high levels of HIV in Swaziland. A Ministry source claimed that the main reason for why the investment was not made in Swaziland was the company's scepticism toward training workers that might fall ill within a few years.

Although HIV prevalence increased over a period when manufacturing production decreased, there is no evidence of a causal effect. The decrease can partly be explained by the fact that several manufacturing companies have closed down. One example of a closed down company is the local engineering firm Brown and Clapperton Group, which employed about 500 people throughout the country.⁸⁵ In fact, the sharp decline is probably due to a combination of factors, including trade liberalisation, increased competition of imported goods, and the constraints mentioned earlier (Madziakapura, 2003). Nevertheless, there is no doubt that the epidemic further adds to the negative development of the manufacturing sector by, for instance, increasing costs of production. However, there is no research that provides information about the size of the effects HIV/AIDS has on the manufacturing sector.

3.3.6 Impact of HIV/AIDS on Firms

One of the main channels through which HIV/AIDS affects the economy is through its impact on firms. The most immediate impact is probably on the costs of production, but profits, investment, and employment are also affected.⁸⁶ How large the impact of HIV/AIDS is on firms depends on the type of business, the skill level, and how easily the employees can be replaced (Whiteside and O'Grady, 2002). While firms in labour-intensive industries such as transportation firms and sugar estates are seriously affected by HIV/AIDS, firms that rely heavily on skilled workers who are hard to replace may be even more vulnerable.

The size of the costs incurred due to HIV/AIDS varies greatly between different companies. These variations depend on the relative importance of direct (out of pocket) costs, which typically include pension, death and funeral benefits, medical costs, recruitment and training and indirect costs such as absenteeism, reduced performance and compassionate leave. All of these costs are significantly raised as the disease kills members of the workforce.⁸⁷

As pointed out in Chapter 1, one of the differences between HIV/AIDS and most other infectious diseases is the long period between infection and the onset of symptoms. This is illustrated in Table 11 below. A company is not likely to incur any major costs of HIV/AIDS until at least five years after an employee is infected.⁸⁸ The overall impact of these costs is an increase in labour costs and a decline in labour productivity, making it more expensive for a company to produce a given quantity.

⁸⁵ They closed their operations based in Blantyre around the year 1999/2000.

⁸⁶ See UN (2004) for a review of the impact of HIV/AIDS on firms. Here we focus on formal sector companies. Chapter 2 provides some information about the informal sector.

⁸⁷ Most direct costs can be measured using human resources and financial data that large companies routinely collect. Relevant data on indirect costs are much more difficult to obtain (Simon et al., 2000).

⁸⁸ Symptoms can begin at any time after infection. However, the five-year estimate in Table 11 seems too short as a reasonable average for the duration of the latency period in Africa.

Table 11 is based on the assumption that the company stays in business and retains the employee in its workforce. This also implies that the company maintains a liability for these costs and from the moment of infection becomes responsible for a stream of future costs. This means that it is incident infections rather than prevalent ones that should be of primary concern to a company. Still, nearly all early work calculated the current costs of prevalent infections (Rosen et al., 2000).

Table 11: Progression of HIV/AIDS in the Workforce and Timing of HIV/AIDS-Related Costs

Timeline	Progression of HIV/AIDS in the Workforce	Economic Impact on the Company
Year 0	Employee becomes infected	No costs at this stage
Year 1–5	Morbidity begins	Morbidity-related costs increases (e.g., sick leave, lower productivity, and payouts from medical aid schemes)
Year 6–7	Employee leaves workforce (death or resignation)	Payout from benefits costs are incurred (e.g., death and pension benefits, funeral expenses, and overtime wages due to vacant positions), and loss of staff morale and knowledge.
Year 7 or 8	Company recruits and trains a replacement employee	Replacement costs are incurred (e.g., recruitment, training, and lower productivity of new employee)

Source: Based on Rosen et al. (2000) and Simon et al. (2000).

3.3.7 Responses of Employers to Costs of HIV/AIDS

When a company recognises the threat posed by HIV among employees, it can respond by three basic strategies for mitigating short- and long-term financial consequences: (1) try to prevent new infections, (2) avoid or reduce the costs associated with existing and future infections, and (3) provide treatment and support for infected employees to extend their productive working lives and thereby delay the costs of infection, the so-called incidence-based approach (Rosen et al., 2000).

If the first strategy, HIV prevention, is used, the initial response of many companies is to implement a HIV prevention program, including AIDS education among employees and their families, the distribution of condoms and treatment of STIs, etc. A critical part of a successful HIV/AIDS program is also the involvement of top leadership. However, there does not seem to be any reliable information on how successful these interventions are (Simon et al., 2000).

We do not know how common HIV prevention intervention is among Malawian companies. However, the Malawian Business Coalition against AIDS (MBCA) was started in 2003 with government support and had about 50 members by early 2005. The MBCA is an independent trust with the aim to mobilise and empower the business community to take effective action on HIV/AIDS in the workplace and outside by providing services to company members.⁸⁹

The second strategy, cost avoidance, is commonly referred to as the ‘burden shift’ in the literature. This is because the companies limit their costs by shifting the burden of HIV-related costs over to governments, households and to some extent to other companies. Of all those affected by the epidemic, private companies are the ones most flexible in containing and avoiding these costs, which is a rational response by profit-

⁸⁹ MBCA, for instance, offers capacity building programmes for Chief Executives and Human Resources Managers, workplace policy development and implementation, workplace training, etc.

maximising businesses.⁹⁰ Companies avoid costs by reducing benefits available to infected workers, outsourcing production activities with workers in high risk groups, shifting from labour-intensive to capital-intensive production technologies or avoiding hiring new employees who are infected or are thought to belong to high-risk groups. This last strategy could even develop into compulsory HIV tests for new recruits. In Zimbabwe, for instance, there is anecdotal evidence of illegal pre-employment testing (Collins, 1997). Rosen and Simon (2002) argue that ‘burden-shifting’ is becoming more common, and others have reached similar conclusions. Gillespie and Kadiyala (2005), for instance, state that private sector firms systematically avoid the economic burden of AIDS because they are able to do so.⁹¹

Finally, we consider one possible outcome when companies choose the third strategy, i.e. providing treatment for the employees. In a study by Rosen et al. (2000), the authors calculate the benefits to companies using the incidence-based approach. In this study, the hypothetical company changes the progression of the disease by extending the average time from HIV infection to death for employees with one, three, and five additional years, through treatment and care interventions.⁹² Their results indicate that there are large costs to be saved by companies that invest in prolonging their employees’ lives. The present value of the future cost of a new HIV infection would fall by nine per cent if employees’ average life expectancy could be extended for one year, by 25 per cent for three-years, and by 38 per cent with five more years.⁹³ However, since only direct costs are included in these calculations, not indirect costs, the gains to companies are likely to be even higher. Some of the costs that have been omitted from these calculations are, for instance, funeral leave and expenses that can be quite high, as described in Chapter 2.

In most regions of the world, companies have been slow to identify the threat to profits posed by HIV/AIDS. Today, however, many national and multinational companies are trying to take action to reduce future costs. One example of this is the government-owned Electricity Supply Corporation of Malawi (ESCOM), which has been implementing an incidence-based corporate HIV/AIDS policy since 2002 (ESCOM, 2002). ESCOM is currently distributing free ARVs to its employees and their closest dependants.

Some governments also support preventive actions by private sector companies by giving tax breaks, and others are requiring that HIV prevention programmes be part of the offers for government business opportunities (Cockcroft, 2002). The government of Malawi does not give tax breaks to companies. However, it cooperates with the business sector through the MBCA.

⁹⁰ In some cases, governments are accepting the burden of AIDS. In others, the government itself shifts the burden onto households or back onto the private sector. See Rosen and Simon (2002) for examples.

⁹¹ In general, the structure of costs is the same for the private and the public sector, although benefits related to illness and death vary greatly between different worker categories. Moreover, as stressed by Barnett and Whiteside (2002:303), the public sector is more vulnerable to the economic impact of HIV/AIDS than the private sector, primarily because the government offers generous employment benefits by national standards (see also Chapter 4).

⁹² These calculations are based on the three costs that studies in five countries (including Malawi) have found to be among the largest HIV-related costs faced by companies: benefit claims, absenteeism, and recruitment and training.

⁹³ Although the evidence on the health impacts and costs of health interventions, such as providing combination ARV to employees, is unclear and at times contradictory, it is obvious that some steps can be taken to extend the average number of productive years between HIV infection and death. The rationale for companies to make such investments and interventions is that it pushes the costs associated with HIV further into the future, thus causing them to be discounted more heavily (Rosen et al., 2000).

Governments around the world can and do constrain the actions of private companies through regulations. However, governments cannot demand too much of the private sector, since this might lead to undesirable outcome such as bankruptcies, relocations, cutbacks, or an increased transition to capital-intensive technologies that requires fewer unskilled employees. Because of this threat, businesses should not be expected to bear all the costs of HIV/AIDS among employees, especially since a successful private sector is crucial for economic growth. Hence, even though it is a shared responsibility to prevent new HIV infections and caring for those infected, the primary responsibility continues to fall on governments and households.

3.3.8 Attempts to Quantify the Costs of HIV/AIDS to Companies

Despite the potentially devastating impact of HIV/AIDS on companies, there is little quantitative information available on the effects of the disease on companies' productivity and profitability. Several companies have undertaken studies in Malawi and elsewhere, but the results are not made public (UN, 2004).⁹⁴ However, a handful of quantitative assessments have been published, including some studies from Malawi.⁹⁵

In a study by Jones (1996) at the large Makandi Tea Estate in Malawi, a marked increase in worker mortality from 1991 to 1995 was found, which was largely attributable to AIDS. Still, the annual cost of HIV/AIDS in the fiscal year 1995/96 was only 1.1 per cent of total expenditure and 3.4 per cent of gross profit. The reason for this was that the company was able to limit costs in the short run by adjusting its employees' contracts and benefits. The largest costs attributable to HIV were the costs for the provision of medical service to employees and their dependants (38%), followed by death in service benefits (32%). The author concludes that the extent to which Makandi will incur higher costs will depend on corporate policy with respect to employee welfare and in the long run the most significant effect of HIV/AIDS at this estate will be the extent to which the cumulative loss of senior staff reduces efficiency and productivity. The availability of unskilled workers did not seem to be a major problem.

In another study from Malawi, a formal cost-benefit analysis of the impact of HIV/AIDS was applied to the firm Brown and Clapperton Limited. The results also showed little effect on operating profit, but the future impact was projected to be significant given the large number of employees potentially infected with HIV. Recruitment and training costs were also expected to increase in the long term, when it becomes harder to recruit skilled people (Jones, 1996b).

The studies from Malawi presented above have in common that the costs of HIV remained low, even though there was a marked increase in absenteeism and mortality. Similar conclusions have been found in studies from other countries. Two examples are a three-company study in Zambia by Smith and Whiteside (1995) and a five-company study in Botswana, which found that HIV costs were relatively low (with an average of 0.7 per cent of the total wage bill) (Greener, 1997).

In the case of Malawi, it is likely that costs have been kept down because of a low level of formal sector labour demand since the mid-1990s;

⁹⁴ These assessments are not complicated, but they do require a large amount of data, which can only be obtained from the companies themselves. This can be hard (Simon et al., 2000).

⁹⁵ Some limitations on these studies are the inconsistent methodologies and scarcity of hard data, which make their conclusions difficult to interpret. Moreover, the costs of absenteeism, medical care, pensions, training, etc., and the impact on companies' profitability vary widely.

for instance, manufacturing production was halved between 1995 and 2005. However, a recent survey of studies on sub-Saharan firms concluded that many firms face substantial cost increases due to HIV/AIDS and that their viability is threatened (UN, 2004). It also noted that the impact of HIV/AIDS varies a great deal across companies and that an important factor is if they provide health insurance, retirement scheme, and the like.

3.4 Natural Resources and the Environment

Malawi's economy is highly dependent on its natural resources since agriculture, fishery and forestry constitute about 40 percent of GDP. This implies that the natural resources of the country are crucial for both employment and livelihood of the majority of Malawians.

Although research on the mechanism through which HIV/AIDS affects the environment is only in its infancy, the HIV/AIDS epidemic most likely undermines the sustainable use of natural resources (Hammarskjöld, 2003). The impact of the epidemic results from two main causes: the loss of human capacity for natural resource management and changes in the use of land and natural resources.

One of the consequences of the HIV/AIDS epidemic is that farming households have less human and financial resources to work on the land. Since many people are trapped in a state of perpetual food insecurity and vulnerability, partly due to the effects of the epidemic, they are likely to maximise short-term gains and spend less time on soil conservation work, that is, work which has a long-term impact on sustainable agricultural production. Loss of topsoil is the most serious environmental problem in Malawi, and it has been so for a long period of time. Even if the small amounts of data that exist on soil losses are scanty, there are indications of increasing soil erosion; many districts have a rate of soil loss well above the rate of soil formation (Ministry of Mines Natural Resources and Environment, 2002).

Evidence from Malawi shows that programmes such as land conservation and soil management need close monitoring by extension workers for successful implementation (GoM/UNDP, 2002). This may especially be true in the advent of AIDS, when the death of prime age adults threatens the knowledge transfer of how to conserve the soil to the remaining family. Since attrition rates for extension workers and other staff in the Ministry of Agriculture have increased as a consequence of HIV/AIDS, the breakdown of support services is likely to further inhibit sustainable land use.

One of the main causes of soil erosion is deforestation. According to the GoM (2005), the rapid exploitation of forests in the country implies that Malawi's forestry resources are currently dwindling. This development could possibly be attributed to the positive relationship between the dependency on forest resources and poverty that has been observed among low-income households in Malawi (Fisher et al., 2005). Barany et al. (2005) conducted a study on the interaction between HIV/AIDS, livelihoods, and forest resources.⁹⁶ They found evidence that woodlands and forests act as a safety net for HIV/AIDS-affected households when they are food insecure. For instance, households that had experienced a primary age adult death were five times more likely to have an increased collection of firewood than unaffected households in the last five years. These findings indicate that the epidemic, through its adverse effect on poverty reduction, has the potential to increase deforestation in Malawi.

⁹⁶ The data were collected in three different sites: Chimaliro, Ndaje and Nkula.

Barany et al., (2005) also report that, according to traditional healers, there has been an increase in the number of people collecting and selling medicinal plants over the last five years. Many plant species are already overexploited. If this tendency continues, it is likely that the epidemic in the long run will alter the flora of the country and reduce the access to traditional medicines.

The loss of human resources also affects access to potable water supplies and safe sanitation facilities, which are basic requirements for reducing poverty (GoM, 2005). Maintenance and repair, and replacement of pumps when they are worn out, have been major issues for water supply in Malawi (Durevall, 2002). In principle, the Ministry of Water Development (MoWD) owns the water pumps in the rural areas, and the ministry is responsible for taking care of them. However, according to senior officers at the MoWD, lack of human resource capacity, partly due to the implications of AIDS, is one big obstacle for service provision in the ministry (GoM/UNDP, 2002). For instance, high vacancy levels have resulted in the cancellation of training in order to transfer maintenance of water pumps to the rural villages. In the medium run, this may have implications for water access and households may have to accept an inferior water quality. This in turn could imply that people may reduce their working capacity and risk their health (Hammarskjöld, 2003).

The shock of HIV/AIDS on the household level not only impoverishes the household, but it also implies that households change their priorities and the long-run perspective becomes less important when adult mortality increases (see Lorentzen, et al., 2005). As a consequence, the epidemic constitutes a direct threat to a sustainable use of natural resources and, hence, impairs the prospects for both short and long-term economic growth.

3.5 Conclusion and Discussion

This chapter has examined how HIV/AIDS affects the real economy at the firm level, sector level, and the macro level. Data indicate that the spread of HIV/AIDS has coincided with low economic growth or stagnation. In spite of this, there is no easily detected relation between HIV/AIDS and economic performance. Few studies, if any, attempt to quantify the impact of the epidemic on the Malawi economy. However, there are several qualitative analyses that convincingly show the potential for devastating effects. Hence, there is a need for improved data collection and statistical analyses. In this chapter, we have only been able to point at the likely consequences of HIV/AIDS.

Macroeconomic performance during recent years has been disappointing, and GDP growth has barely kept up with population growth. This is due to slow productivity growth and very low private sector investment rates. Slow productivity growth is what can be expected in a country with high HIV prevalence, where workers are ill or absent from work and a lot of knowledge and cumulated work experience are lost. Moreover, low investment rates are also a logical consequence of HIV/AIDS, as saving rates decline when family members fall ill and reduced life expectancy increases consumption at the expense of investment. However, there have been major changes in economic policy and exogenous shocks such as drought, and these have had an important impact on the economy as well.

Unless major changes in behaviour occur, GDP per capita is unlikely to increase much over the next decade. Simple simulations show that even in the best of cases, that is, with six per cent productivity growth

and a sharp increase in the investment ratio to 25 per cent of GDP, income per capita will only be ten per cent higher in 2015 than today. The demographic structure explains a significant part of this outcome. If total fertility drops by more than the predicted decline, i.e., from 6.1 to 4.8 children per woman, GDP per capita increases more. Hence, the impact of HIV/AIDS on fertility is a key issue. Nevertheless, the prospects for the next 15 years look bleak, even under very beneficial circumstances. Chapter 5 discusses scenarios under various assumptions of behavioural adjustment to HIV/AIDS.

The sections on the development of the agriculture and manufacturing sector clarify how the private sector is affected by the epidemic. Smallholder agriculture suffers both because it is labour intensive and because loss of income reduces purchases of seeds and fertilisers. Moreover, there appears to be a switch away from cash crops such as tobacco to less labour-intensive crops. There is, however, no data that substantiates this at the aggregate level. Commercial agriculture is also likely to suffer due to significantly increased costs since workers, both at estate farms and in the fishing industry, tend to be particularly at risk for HIV infection.

The manufacturing sector in Malawi has contracted sharply during the last ten years. It is not easy to say how much of this development that is due to HIV/AIDS, trade liberalisation, an unstable macroeconomic environment, or the political and regional environment. However, production costs have certainly increased due to HIV/AIDS, and both domestic and foreign direct investments have most likely been affected.

There are a limited number of studies on the impact of HIV/AIDS on individual private sector firms. Many firms seem to manage to shift the cost burden by adjusting employee contracts and benefits. However, some assume an increased responsibility for the health of their employees, pushed by the costs related to the HIV/AIDS epidemic. Although still not very common, there are companies in Malawi with a clearly formulated HIV/AIDS policy. ESCOM implemented their own HIV/AIDS policy already in 2002, and is currently distributing free ARVs to its employees and their closest dependants (ESCOM, 2002). This is likely to be cost effective since the ARVs prolong the lives of the employees.

The environment is also likely to suffer because of HIV/AIDS, and this may undermine the sustainable use of natural resources. The epidemic leads to the loss of human capacity for natural resource management and generates changes in the use of land and natural resources. One outcome is that HIV/AIDS reduces life expectancy, which is likely to induce short-sighted behaviour. According Lorentzen et al., (2005) and others, this has consequences for investment in human and physical capital, which declines, and for fertility, which may rise. However, it also constitutes a direct threat to the sustainable use of natural resources, and hence, for the prospects of both medium and long-term economic growth, since short-sightedness makes people care less about the environment.

4. Impact of HIV/AIDS on the Public Sector

This chapter explores how the public sector has been affected by HIV/AIDS. The impact on this sector is crucial for public service delivery and, consequently, for the ability of the government to create enabling conditions for economic growth and poverty alleviation. Sections 4.1 and 4.2 explore the impact of HIV/AIDS on human and financial resources in the public sector. Thereafter, we turn to the impact of two key sectors for human capital development: health and education in Sections 4.3 and 4.4. We also touch briefly upon the impact of the epidemic on social security and the safety, security and access to the justice sector in Sections 4.5 and 4.6. The final section summarises the main findings of this chapter.

4.1 Impact of HIV/AIDS on Human Resources

In general, research on the impact of HIV/AIDS on the public sector is sparse (Barnett & Whiteside, 2002:299). However, in 2002, the Government of Malawi (GoM) and the United Nations Development Programme (UNDP) published one of the most comprehensive reports to date on the impact of HIV/AIDS on human resources in the public sector (GoM/UNDP, 2002).⁹⁷ Researchers analysed human resource data from 1990 to 2000 in five public sector organisations in Malawi including: the Ministry of Health (MoH); the Ministry of Education and Human Resources (MoE); the Ministry of Agriculture, Irrigation and Food Security (MoAI); the Ministry of Water Development (MoWD), and the Malawi Police Service (MPS). Since these organisations together constitute 79 per cent of all the established posts in the public sector, the report gives a good picture of the general implications of HIV/AIDS for the public sector in Malawi.

As the public sector mainly provides services, human resources are among the most important factors for effective public service delivery. In general, the HIV/AIDS epidemic erodes human capital by increasing both mortality and morbidity within an organisation. Mortality in turn increases attrition levels⁹⁸ and leads to high vacancy levels.⁹⁹ At the same time as mortality rates increase, morbidity (of oneself or family members) causes an

⁹⁷ This section draws upon evidence presented in this study if not otherwise indicated.

⁹⁸ Attrition refers to the organisational loss of labour. The attrition rate is defined as the number of workers who left the organisation per 1 000 workers employed in the organisation.

⁹⁹ Vacancy is defined as the number of personnel missing from the authorised staff positions that are necessary in order to achieve the organisational objectives.

increase in absenteeism. Both the increase in absenteeism and the increase in the number of vacant positions result in a greater workload for the employees who are left within the organisation. Ultimately, the epidemic has an adverse impact on productivity, financial resources, and service provision. In the following section, we will discuss each of the mechanisms through which HIV/AIDS erodes human capital in the public sector.

4.1.1 Attrition

An important finding of the public-sector study is that there was an increasing trend in attrition in all of the researched organisations. Table 11 shows that the level of attrition varied between the different ministries. On average, it reached 2.3 per cent during the period 1990–2000 (i.e. for every 1 000 public servants, 23 left the ministry every year). Approximately fifty per cent of all cases of attrition were caused by death, followed by resignation and retirement.

The expected death rate for the population has been calculated to be approximately 11 deaths per 1 000 people aged between 15 and 49 years (NSO, 2000). Hence, as indicated in Table 11, the average mortality rate for all ministries (except for the MoE) is higher than for the average population. Out of the total number of deaths (8 105), GoM/UNDP (2002) estimates indicate that at least 799 are likely to be AIDS-related, and the highest percentage of AIDS-related deaths was seen in the MoWD, MoAI and MPS. However, these numbers are uncertain, and are likely to be far too low; NAC (2004) estimates that AIDS is currently responsible for three out of four deaths among adults aged 15–49.¹⁰⁰

Table 11: Summary Statistics of Mortality and Attrition Rates by Ministry, for the Period 1990–2000

Ministry	Total number of staff in posts, year 2000	Average Attrition Rate	Average mortality rate	Percentage of attrition caused by death
MoWD	517	15%	5.9%	45%
MoAI	7 275	4.8%	2.1%	51%
MoH	15 622	2.2% ^(b)	1.3%	58%
MPS	6 497	6.1%	2.8%	46%
MoE ^(a)	62 234	1.6%	0.7%	45%
Total	92 145	2.3% ^(c)	2.6%	

Notes: ^(a) Based on data on qualified teachers and support staff only; ^(b) Based on data from 1996–2000; ^(c) Excluding MoH

Source: GoM/UNDP (2002)

4.1.2 Mortality Rates

When one breaks down mortality rates by sex and age, deaths are high among both men and women in the 25–45 age groups. In accordance

¹⁰⁰ Since the cause of death was not reported, the authors assumed proxies based on established adult mortality trends in order to determine the extent of HIV/AIDS-related mortality. Furthermore, in certain instances when HIV/AIDS-related causes and symptoms were reported as the death cause in the age group 25–40 years, it was assumed that the reason for death was AIDS.

with national HIV prevalence data, female deaths peak earlier (in the 20–29 age group) than male deaths, which suddenly rise in the age group 25–34.

A consequence of the age distribution of death rates is that the pool of employees who are ready to take on senior positions is shrinking, which in turn implies that young staff with little experience gets promoted prematurely. In the long run, this will have serious implications for the future leadership and quality of management in the public sector. Furthermore, the fact that women die earlier than men may reduce the likelihood of women being able to reach management positions; hence, the goals of gender equality may be undermined.

Standardised mortality ratios (SMRs) show the extent to which one group is affected by deaths compared to the average population, which has an average standard mortality rate of 100.¹⁰¹ All ministries except for the MoE had higher SMRs than the average population, which possibly can be explained by the fact that many MoE employees work in rural areas where the HIV/AIDS prevalence rate is lower compared to urban areas. With a SMR of 980, non-professional workers of the MoWD had almost ten times higher mortality rates than the average population. Other occupations hit by death were Technical Officers (552) and Technical Assistants (319) in the MoWD. The high mortality rates for these professionals are probably related to the fact that they often work away from home, which increases their likelihood of engaging in high-risk sexual behaviour and, consequently, the risk of being infected by HIV. Extremely high SMRs were also found among professionals at the Department of Animal Health and Industry (457), at the MoAI, and among Clinical Officers (393) in the MoH.

4.1.3 Vacancy Rates and Workload

The public sector operates under extremely high vacancy levels. This suggests that public servants cannot easily be replaced. This, in turn, makes the sector vulnerable to the impact of HIV/AIDS, because increasing attrition is likely to cause service disruptions in the affected government units. The high number of vacant positions is due to various reasons. Examples include lack of government funds, an inflexible recruitment and promotion system, unavailability of skilled workers, market competition (from the private sector and from overseas), and high attrition (DHRMD/UNDP, 2003).

Even if the high vacancy rates cannot be attributed to HIV/AIDS alone, death-related attrition due to AIDS has undoubtedly worsened an already strained situation. In the MoAI, for instance, a direct relationship between high standardised mortality ratios and vacancy levels was noticed.

Vacancy rates give an indication of the areas in which there are shortages of critical skills and where there is an urgent need for human resources. An assessment of ten public organisations revealed that vacancy levels for the professional positions were higher than for support functions by 36 per cent and 30 per cent, respectively. This indicates that there is primarily a lack of highly educated public servants. Furthermore, a large proportion of vacancies were found among the operational and middle level cadres compared to management level. The latter is primarily due to the incentive structure within the public sector; middle level

¹⁰¹ A Standardised Mortality Ratio (SMR) is defined as the ratio of the actual number of deaths in a population to the number of expected deaths if the population had the same death rate as the standard population. The average standard mortality rate is 100. A figure over 100 is worse than the national average, and a figure less than a 100 is better.

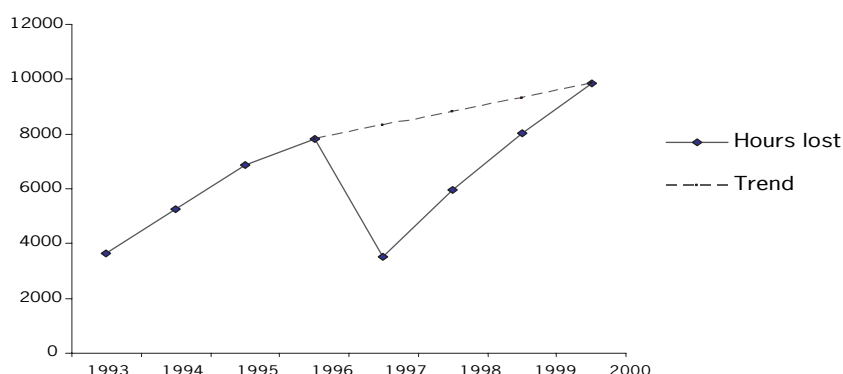
managers earn substantially less than managers. According to vacancy rates, the following areas were identified as in critical need of human resources: planning, monitoring and evaluation, policy analysis and coordination, specialized occupational fields in core services of the respective ministries, information technology or management information systems, and HIV/AIDS coordination (DHRMD/UNDP 2003). Judging from this listing, vacancy rates are particularly high in positions that need to be filled with professionals.

4.1.4 Absenteeism and Morbidity

Absenteeism and morbidity are in general not recorded within the public sector and records of the number of sick leaves are not available.¹⁰²

However, data on time lost due to morbidity within the MPS has been collected by the Police Hospital. The data from MPS, reported in Figure 10, show an increasing trend of morbidity over time. This is in line with other reports from public officials throughout the public sector. According to the GoM/UNDP report, the sudden fall in 1997 was attributed to a change in information management system rather than to a real drop. Given this explanation, the overall increasing trend (illustrated by the dotted line) is clear. The three major reasons for absenteeism were: personal illness, funeral attendance, and caring for sick people. This further illustrates that HIV/AIDS is a major determinant of absenteeism within the public sector.

Figure 10: Time Lost Due to Morbidity in Malawi Police Services, 1993–2000



Source: GoM/UNDP 2002.

4.1.5 Impact on Service Delivery

The high vacancy levels and the increasing trend in absenteeism leave the remaining workers with an ever-increasing workload. This has implications for working procedures as well as service delivery. Some of the strategies that have been developed in order to handle the situation are: reallocation of duties to remaining staff, employment of retired officers, higher dependency on expatriate staff and volunteers, and an increasing trend of contracting out activities to the private sector.¹⁰³

¹⁰² This is because often sick leave policy is not implemented. Public servants are instead paid on humanitarian grounds as long as they are in a post, even if they are absent due to illness.

¹⁰³ In the MoAI, it was reported that low-level staff needed to act in higher positions without being offered training. This, in turn, created distrust and poor teamwork, as well as ineffective service delivery, within the organisation.

In the end, although staff is trying to deal with the situation, human capacity constraints affect both the quantity and quality of service delivery. Table 12 gives some examples of how the output of the MoAI and MoWD has been affected by the erosion of human capital.

Table 12: Examples of Impact on Service Delivery of the MoAI and MoWD

	MoAI	MoWD
Examples of impact on service delivery	• Inadequate technology development and dissemination • Insufficient staff to cover the farmers • Reduced quality of service when generalists have to act like specialists • Poor monitoring and supervision of programme implementation • Poor or insufficient collection of agricultural statistics	• Implementation of new projects failed • Unable to train rural communities in water system maintenance • Fail to collect hydrological data due to lack of transport, staff and funding • Delay in programme implementation

Source: GoM/UNDP 2002

If other factors are held constant, it is likely that the adverse impact on service delivery will increase more and more with every employee who dies. This is because it is easier to cover up for the initial lost co-workers, but when an increasing amount of experience and institutional memory is lost, the marginal costs of losing one more worker is substantially increased.

In sum, we see an increasing trend of attrition within all ministries, which to a great extent is caused by deaths as well as brain-drain of skilled workers, especially health workers. Since the pattern of deaths follows the national prevalence data, it can be expected that many deaths are AIDS-related. Although data is poor, there are signs of an increasing trend of HIV/AIDS-related absenteeism within the sector as a whole. Vacancy levels are generally high, and this is particularly true for technical/professional positions and on the operational and middle cadre level.

4.2 Impact of HIV/AIDS on Financial Resources

4.2.1 Implications for Government Revenue

HIV/AIDS influences government revenue in at least three ways. Firstly, it affects the tax base negatively by reducing economic growth and that reduces tax revenue for a given tax rate. Secondly, it undermines revenue collection through its impact on the work effort and efficiency of public employees. And thirdly, it is likely to generate significant increases in foreign assistance.

The epidemic has no doubt had a harmful effect on the tax base in Malawi, but it is not easily detected in the data on tax revenue. This is because there is not a strong link between tax revenue and GDP, the most straightforward measure of the tax base. In fact, in a recent study, Mangani (2004) fails to find any relation between the two variables for the period 1970–2003. One explanation for this is according to the author that the measure of GDP is incorrect. However, it seems likely that changes in efforts to collect taxes and tax reforms also have played an important role.

Table 13 provides data on various sources of government revenue in per cent of GDP for selected years over the period 1993/94 to 2004/05. Government revenue, i.e. tax and non-tax revenue, rose from about 17 per cent in the 1990s to 20 per cent in 2002/03 and to 25 per cent in 2004/05. The main source for this increase was tax revenue, which went from about 14 per cent of GDP in the mid-1990s to over 20 per cent in 2004/05. This increase was driven by improved tax collections from individuals and on goods and services. However, all tax collections did not increase; tax income from companies declined from about three percent to two per cent, due to a reduction in the tax rate, low profits and the closures of several manufacturing firms. Tax collection on international trade also decreased, mainly as a result of reductions in import tariffs.

The main explanation for the increase in tax revenue is the establishment of the Malawi Revenue Authority (MRA) in 1998. The MRA is a government agency that was formed to improve the functions previously carried out by the Departments of Customs and Excise, and Income Tax. It operates on a commercial basis, and its employees work under much better conditions than those in the Malawi Civil Service (MCS).

Table 13: Government Revenue in Per Cent of GDP, Selected Years

	1993/94	1996/97	1999/00	2002/03	2004/05*
Revenue and Grants	21.0	21.9	24.1	27.0	38.8
Revenue	17.6	16.4	17.2	20.2	24.8
Tax revenue	14.6	15.5	15.6	17.5	21.8
Non-tax revenue	2.3	0.9	1.6	2.7	3.1
Income and Profits	5.5	6.9	7.2	7.6	9.0
Companies	2.7	3.5	2.8	2.0	2.1
Individuals	2.8	2.2	3.4	4.4	5.6
Goods and Services	6.7	5.3	6.4	6.5	7.2
International Trade	2.9	3.7	2.4	1.8	2.3
Taxes					

Sources: IMF (2001), IMF (2005) and Economic Report (2005)

* Preliminary, August 2005

It is worth noting that the MRA was formed in the midst of the pandemic. Hence, it is an illustration of the fact that although the negative impact of HIV/AIDS on efficiency in the public sector is substantial, government institutions can become more efficient with adequate political will and incentive structure. This shows that there might be so much scope for improving management and administrative capacity within the public sector that HIV/AIDS might not have a dominating impact on the supply of services.

Table 13 also has information about foreign aid, since it reports government revenue and grants in relation to GDP. Since Malawi is an aid-dependent country, a large share of government revenue is grants; during the 1990s, grants made up about 25 per cent of total government revenue. In the fiscal year 2004/05, the share reached 36 per cent. This shows that donors to a large extent determine the evolution of government income.

Donors' willingness to give foreign aid, put simply, depends on whether Malawi has a programme with the IMF, how much support is mobilised to fight HIV/AIDS, and if the developed countries will deliver upon their commitment of increasing foreign aid. One illustration of this is changes in Malawi's recent relations with the IMF, which had a large impact on resource inflows. In 2000, the IMF approved a three-year Poverty Reduction and Growth Facility, but it was soon declared off track due to fiscal slippages. However, after elections in 2004, the new Government requested a Staff Monitored Programme (SMP), and in August 2005 a three-year Poverty Reduction and Growth Facility arrangement was put in place. As is evident from Table 13, net inflows of foreign aid increased significantly even during the period when the SMP was in place.

The recent increase in foreign aid is also due to the initiation of two new programmes to increase health expenditure: the health sector-wide approach, (Health SWap), a pooling of resources from various donors that will help to recruit and retain health workers and fund existing and new programmes, and the Malawi Global Fund, which supports the prevention and treatment of HIV/AIDS, malaria and tuberculosis. About US\$200 million is committed through the Health SWap over the period 2005–2010, and the Global Fund has approved funding of US\$62 million. This amounts to 3.6 per cent of GDP for the fiscal year 2005/06. In total, grants as a share of GDP are projected to increase from 6.7 per cent in 2002/03 to 14.0 per cent in 2004/05, 18.9 per cent in 2005/06, and 14.3 per cent in 2006/07, according to the IMF (2005). Hence, HIV/AIDS in combination with prudent economic policies has the potential to generate large resource inflows on a continual basis for at least another five years.

According to IMF (2005), the efficiency of the MRA can still be enhanced. Thus, it is possible that the improved tax collection is maintained in the near future (for instance, the next five years), in spite of HIV/AIDS. However, it is not easy to predict the evolution of domestic government revenue over the next ten to 15 years. This will depend on economic growth and the stability of Malawi society in general. There, factors such as the political climate, public finance management, corruption, and availability of sufficiently well educated people are vital.

4.2.2 Implications for Government Expenditure

There is little doubt that HIV/AIDS leads to increased public expenditures. However, variations in actual public expenditures during the 1990s and up to the fiscal year 2003/04 were mainly driven by a combination of the availability of budget support, external shocks, such as droughts, and, above all, inadequate public finance management (see World Bank, 2003). As a result, it is difficult to detect the impact of the epidemic on the level of public expenditures.

It is easy to find evidence of the lack of control over expenditures, indicating that public expenditures probably have varied more because of governance-related administrative inefficiencies than because of HIV/AIDS. For instance, there have been large differences between approved budgets and actual expenditures during almost all years since 1980, and even revised budget ceilings have regularly been overrun (Durevall and Erlandsson, 2004). Furthermore, the performance seems even worse when votes or line items are compared; differences between budgeted expenditures and outcomes were often very large (IMF, 2004). The role of political will was amply demonstrated when control over expenditures

improved significantly directly after the change of government in 2004, and the outcome was in line with the original budget during the fiscal year 2004/05.

On the other hand, a closer look at expenditures reveals many sources of increased costs due to HIV/AIDS. First, there are the costs of fighting HIV/AIDS within the public sector through workplace programs in ministries. Second, and more importantly, there are personnel costs because of absenteeism, sick leave, funeral attendance, costs of funerals, medical benefits, death gratuities, training costs for the replacement of diseased workers, and difficulties in controlling the number of ghost workers because of the high death rates (GoM/UNDP, 2002; Haacker, 2004b).

Data on expenditures for the development of sector workplace policy and programs for HIV/AIDS are available from Budget Documents. During the fiscal years 2003/04 and 2004/05, Other Recurrent Expenditures (ORT) on HIV/AIDS intervention amounted to 0.3 and 0.4 per cent of total ORT. In the budget for 2005/06, they were increased to 0.9 per cent. However, it is noteworthy that HIV/AIDS programmes do not seem to have been implemented in all government bodies yet: in 2004/05, about ten per cent had no HIV/AIDS expenditures at all.

There is also HIV/AIDS-related expenditure in the Development Budget, and in the 2005/06 Budget there is a vote for the Department of Nutrition, HIV and AIDS, which includes National AIDS Commission. Table 14 reports these expenditures as well as ORT on HIV/AIDS programmes. Total HIV/AIDS related expenditures make up about ten per cent of all expenditures. The bulk of these are financed by grants, while domestically financed expenditures only amount to a quarter of a percent of total expenditures.

Table 14: Approved Allocations for HIV and AIDS (in MKW).

	Budget Allocation 2004/05	Budget Allocation 2005/06
Development Part 1 (donor projects)	5,496,800,000	5,165,581,000
Development Part 2 (locally financed)	220,000,000	130,000,000
Total Development HIV/AIDS	5,716,800,000	5,295,581,000
ORT HIV/AIDS	110,820,000	155,886,000
Dept. of Nutrition, HIV and AIDS Recurrent Budget	-	33,303,000(a)
Total HIV/AIDS in% of Total Expenditure	12.6	9.0
Locally financed HIV/AIDS in% of Total Expenditure	0.36	0.24

Source: GoM (2005b) (a) Includes ORT programme for HIV/AIDS Services.

It is difficult to estimate the impact of HIV/AIDS on personnel costs in the public sector. However, they are bound to be large, and, as stressed by Barnett and Whiteside (2002:303), they are probably higher than in the private sector. This is because the government offers generous employment benefits by national standards and because of the employment practices of the public sector.¹⁰⁴ Moreover, the process of adjustment to the HIV/AIDS environment is likely to be much slower in the public

¹⁰⁴ Since the information on employment benefits varies substantially between different organisations both in the private and public sector, a systematic comparison between the two sectors was beyond the scope of this study.

sector, both for political reasons and because the impact of lower productivity is not so visible; it does not result in lower profits.

An illustration of one of the challenges facing the public sector that cannot be mastered easily is the recruitment of new staff. In Malawi, the recruitment system is highly centralised around the Department of Human Resource Management and Development. This, as well as the fact that most government employees are permanent employees, which means that they cannot be replaced until they die or retire, causes delays in the recruitment procedures. One example is the recruitment of health workers, which has been highlighted in connection with the topping-up of wages in the health sector. Before the Ministry of Health formally can employ a person, three Government bodies, the Health Service Commission, Department of Human Resource Management and Development and Ministry of Finance, must give their approvals. This can take well over six months. Since the process is so long, it is common that new employees start working before the formal decision is taken and that they either are paid with ORT, since they are not on Government's payroll, or work without pay. It is also likely that many health workers avoid the public sectors because of the recruitment procedures. In addition, the process of removing staff that have resigned or passed away from Government's payroll can also take several months. With low rates of attrition, these delays might not be very costly. However, HIV/AIDS has increased attrition tremendously, making the centralized recruitment system a weak spot that generates inefficiencies. In addition, it renders the determination of the number of employees in the MCS at any point in time very difficult.

Since it is complicated to estimate the magnitude of the indirect costs of HIV/AIDS and beyond the scope of this study to attempt to do that, we summarize the results from the GoM/UNDP (2002) report. These are the best estimates available. The estimates are based on the assumption that approximately ten per cent of professional deaths are HIV/AIDS-related. As previously stressed, this assumption underestimates the true number of deaths due to AIDS significantly. Therefore, the costs presented in the following should be regarded as minimum values. The costs reported in Table 15 are in prices for the year 2000.

Table 15: Estimated Personnel Costs for HIV/AIDS in the Five Public Organisations (in million) 1990–2000 ^(a)

Cost items^(b)	Amount in MK
Funeral costs	9.6–36.5
Death benefits to remaining family members	36
Estimated cost for funeral-related absenteeism	4.4
Estimated cost for morbidity-related absenteeism ^(c)	7.1
Total	57.4–84

(a) Includes the five ministries surveyed, i.e. 79 per cent of the total public sector;

(b) Training and recruitment costs and medical costs could not be estimated and are hence not included in the table

(c) Assuming AIDS-related death is preceded by 65 days of absenteeism and that HIV/AIDS-infected people are likely to be absent 15 days per year due to illness

As Table 15 indicates, the total cost for the five organisations amounted to between MK 57.4–84 million (US\$1,220,898–US\$1,786,680) during the ten-year period.¹⁰⁵ Extrapolation of this number to the whole public sector gives a total estimated cost of MK 73–106 million (US\$1,552,710–US\$2,254,620) or an annual expenditure of MK 6.6–9.6 million (US\$140,382–US\$204,192). However, it should be kept in mind that these estimates only take into account absenteeism due to the death and morbidity of civil servants. In reality, the time lost due to funeral attendance and morbidity is substantially higher, since public servants also attend funerals of relatives and take care of sick family members who do not work in the public sector. In addition, the cost of loss of productivity at work due to grief, etc., is likely to be high.

As seen, HIV/AIDS-related costs lay a substantial burden on public finances at ministry level. Although these costs are difficult to track in the budget, they need to be paid for. Hence, it is reasonable to suspect that operational budgets are gradually being diverted from public service delivery to cover the costs of HIV/AIDS.

In sum, there is little evidence that HIV/AIDS will lead to a decrease in government revenue in the near future. This is primarily due to the increased efficiency of tax collection during the recent years. In addition, HIV/AIDS has the potential to generate large resource inflows from international donors. On the expenditure side, however, the HIV/AIDS epidemic has an adverse impact. We have primarily shown its impact at ministry level in terms of increased personnel costs. Since HIV/AIDS-related expenditure is normally not budgeted, the increase in personnel costs implies that scarce resources are diverted from service delivery. On the national level, it is difficult to trace the impact of HIV/AIDS, since public expenditure has varied because of governance-related administrative inefficiencies, rather than because of the impact of the epidemic.

4.3 Impact of HIV/AIDS on the Health Sector

In a country with high HIV/AIDS infection rates, such as Malawi, the health sector is strategically important, since it is the primary sector for monitoring the epidemic and treating HIV/AIDS-infected people. In this section, we will study the impact of HIV/AIDS on both the supply and demand sides of health care in Malawi.

4.3.1 Malawi's Health Sector

The capacity of the health sector determines how well it is able to respond to the epidemic. To put the Malawi health sector into context, Table 16 gives a comparative overview of selected indicators in the health sector in some sub-Saharan countries, all heavily affected by HIV/AIDS.¹⁰⁶

¹⁰⁵ The following conversions into USD are based on the historical exchange rate for the period 30 August 2002 to 31 August 2000, which was USD/MK 0.02127 (Source: www.oanda.com, 2005–10–22).

¹⁰⁶ These data exclude the informal health sector (traditional healers and traditional birth attendants), which provides care to a large proportion of the population in the selected countries. In Malawi, for instance, the majority of the population uses the informal sector regularly, or only (GoM 2003).

Table 16: Selected Indicators of the Quality of Health Services in Countries in Sub-Saharan Africa Heavily Affected by HIV/AIDS

Countries	Adult (15–49) HIV prevalence rate (a)	Total Health Expenditure as% of GDP	Total Health Expenditure in (US\$) /capita(b)	Physicians/ 1 000 000 population	Nurses/ 1 000 000 population	Hospital beds/ 1 000 population
Years	2003	2002	2002	2004	2004	Various years
Botswana	37.3	6.0	171	28.8	241.1	1.2 (c)
Lesotho	28.9	6.2	25	5.4	60.1	...
Malawi	14.2	9.8	14	1.1	25.6	1.34
Mozambique	12.2	5.8	11	2.4	20.5	0.9
Namibia	21.3	6.7	99	29.5	168	0.3
South Africa	21.5	8.7	206	69.2	388.0	0.8(c)
Swaziland	38.8	6	66	17.6	320.3	0.7
Tanzania	8.8	4.9	13	2.3	36.6	0.9
Uganda	4.1	7.4	18	4.7	5.4	0.9
Zambia	16.5	5.8	20	6.9	113.1	...
Zimbabwe	24.6	8.5	118	5.7	54.2	0.5

Notes: ^(a) Source: UNAIDS Estimates end 2003; ^(b) Average exchange rate (in US\$); ^(c) Data from public hospitals only. Sources: WHO, 2005a; WHO, 2005b; Haacker, 2004a.

Table 16 clearly shows the poor status of the Malawi health sector, in terms of both absolute health expenditure and human resources. What stands out is Malawi's poor ranking with regards to human resources, with as few as 1.1 physicians per 100 000 people. Although this number is extremely low, the situation is not as bad as it seems: in addition to physicians there are close to 500 Clinical Officers, a kind of paramedic who takes on many responsibilities that traditionally belong to physicians. MoH and CHAM employ them.¹⁰⁷

In addition to the poor quality of health services in Malawi, inequality of access is also an issue of concern. On average, there is one public health facility¹⁰⁸ per 17 000 inhabitants and coverage differs by geographical area, where access in rural areas is the poorest.¹⁰⁹

The public health care services included in the Essential Health Care Package are basically free of charge.¹¹⁰ However, a recent study shows that households pay a large share of the health bill: household out-of-pocket spending is 26% of total health sector expenditure or US\$3.2 per capita (Martin-Staple, 2004). In addition, households with the capacity to pay are often free-riders on the backs of the poor households who end up paying (Conticini, 2004).

¹⁰⁷ The main formal health providers in Malawi are: The Ministry of Health and Population (MoH) (60%) and the NGO Christian Hospital Association of Malawi (CHAM) (25%). The private sector is still relatively small (Kemp et al. 2003).

¹⁰⁸ Including MoH and CHAM facilities.

¹⁰⁹ Only 16 per cent of rural households (compared to about 50 per cent of urban households) had access to health care, defined as living within 30 minutes to nearest health facility by foot (NSO, 2002).

¹¹⁰ The Essential Health Care Package addresses the major causes of morbidity and mortality of the general population and focuses particularly on medical conditions and service gaps that disproportionately affect the rural poor (GoM, 2002; Kemp et al. 2003).

Malawi has an extremely low ratio of skilled to unskilled staff, and the greatest challenge to the health sector is the acute lack of skilled personnel. The current situation has been described as critical by several sources (MoH, 2003; Makwiza et al., 2005). There are two main reasons for the low level of qualified staff: poor retention of existing staff and insufficient supply of trained workers (Martin-Staple, 2004). Migration of health workers both externally (overseas) and internally (to private and NGO-sector) has increased during recent years, and it is one of the reasons for the high attrition rates of skilled staff. Good data on emigration is lacking, but the average number of nurses and midwives seeking validation of certificate to work abroad between the years 2000 and 2003 amounted to approximately 110 people a year (approximately 80–85 per cent left for the United Kingdom) (MoH, 2003). However, the number of emigrating nurses is most likely higher, as there are nurses who leave without validation certificate. In addition to the loss of nurses due to emigration, many retire prematurely, move to the private sector, or switch careers (DFID-Malawi, 2005). In 2003, only 70 of approximately 500 nurses who graduated from government-funded training entered the public health service (Martin-Staple, 2004). Nevertheless, Malawi has been fairly successful in keeping its doctors within the country, although they are in short supply (DFID-Malawi, 2005). With regards to the emigration of Clinical Officers, it is probably not as high as with nurses since the Clinical Officer training is not recognised internationally. Inadequate remuneration is the most important reason for health care workers to leave the public sector (Martin-Staple, 2004).

Due to the high vacancy rates in the MoH, only ten per cent of 617 health facilities satisfy the human resource requirements for delivering the Essential Health Care Package (Martin-Staple, 2004). In response to the human resource crisis in the health sector, the government of Malawi produced a report in April 2004 that identified priority areas for donor support. In reaction to this call, DFID, in collaboration with the MoH, developed an Emergency Human Resource Programme. The programme focuses on: (i) improving incentives for the recruitment and retention of Malawian staff through salary increases for eleven selected professional and technical cadres; (ii) external stop-gap recruitment of physicians, and; (iii) a significant expansion of domestic training capacity. Furthermore, this programme has been incorporated into the recently initiated Sector Wide Approach (SWAp) (DFID-Malawi, 2004). As part of the Human Resource Programme, a general increase in salaries of health care workers became effective in October 2004, and a 52 per cent top-up of technical staff's salaries was implemented in the beginning of April 2005 (MEJN, 2005). Since these policies are still new, their effects on retention are not known at the time of writing.

4.3.2 Implications for the Demand for Health Care

In an HIV/AIDS epidemic, people die and get hospitalised at an early age. In Malawi, this implies an increase in the aggregate demand for health care due to the overall deterioration of health in the population. In addition to this general increase, sero-positive patients require new treatment methods that have to be introduced in an already strained health sector.

Haacker (2004a) provides indicators of the size of the burden that the epidemic poses to the health care system in sub-Saharan Africa. Assuming ARVs are not available for the general population, Table 17 shows that in the near future the share of deaths related to HIV/AIDS will

increase substantially in most countries. In Malawi, the ratio of AIDS-related deaths to total deaths is expected to increase from 45 per cent in 2004 to 58 per cent in 2010. Hence, the demand for health care will increase considerably. It will be extremely difficult to cope with this in the context of a sector lacking skilled personnel.

The increased pressure on the health care system becomes evident when studying the share of medical wards occupied by HIV/AIDS patients. According to the National Health Account (2001), AIDS-related illness accounted for over 70 per cent of all in-patient admissions. In high prevalence areas and within certain age groups, the number is likely to be even higher. Among 1 225 patients between the age 30 and 40 who were admitted to a hospital in Blantyre in 1999–2000, 80 per cent were HIV-positive. This group further constituted 91 per cent of the patients in the medical ward and 56 per cent of those in surgical wards (Lewis et al., 2003).

Table 17: Selected Indicators of the Impact of HIV/AIDS on the Health Sector in Sub-Saharan Africa (Per cent except where stated otherwise)

	Mortality, All ages 2004		Mortality, All ages, Projected 2010 ^(a)		% of Hospital Beds Occu- pied by HIV Patients	Number of AIDS patients/ physician ^(c)
	Total	From AIDS	Total	From AIDS	Various years ^(b)	
Botswana	2.9	2.5	2.9	2.6	60–70	156.7
Lesotho*	1.5	0.6	2.5	1.7		535.2
Malawi*	2.2	1	2.4	1.4	30–80	507.1 ^(d)
Mozambique	2.1	0.7	2.2	1	30	
Namibia	1.8	1.3	1.9	1.5		72.2
South Africa	2	1.3	2.3	1.6	26–70	38.2
Swaziland*	2	1	3.2	2.4		257
Tanzania	1.7	0.6	1.5	0.5	50–90	214.6
Uganda	1.3	0.3	1.1	0.2	50	
Zambia	2.1	1	1.9	0.9	60–80	239.1
Zimbabwe*	2.2	1.7	3.2	2.7	50–80	177

Notes: * Estimated mortality refers to 2002 rather than 2004, and projections are based on data available in 2002; ^(a) These projected mortality rates are based on the assumption that ARV is not available for the general population. However, it should be kept in mind that this is not an adequate assumption today since ARVs have become available for free in most of the countries included in the table; ^(b) Estimates obtained from various web sites and news agencies; ^(c) Estimate by Haacker (2004a) based on the assumption that ten per cent of HIV-positive individuals seek the services of a trained physician (assuming that ARV would be available would greatly increase the figures in this column), ^(d) Clinical Officers are not included. Source: Haacker (2004a).

Furthermore the epidemic puts pressure on the infrastructure in health sector. Over a seven-day period in 2003, the average bed occupancy rate among hospitals in six districts was 119 per cent. Lilongwe Central

Hospital had the highest rate, 162 per cent.¹¹¹ Hence, patients are sharing beds or even sleeping on the floor. As a result, there is increased infection dissemination and a decreased quality of care (Makuti et al., 2004).

As far as we know, there are no studies regarding the extent to which sero-positive patients have crowded out sero-negative patients in Malawi. However, in Kenya, one study revealed that admissions from sero-negative patients decreased by 18 per cent when the number of HIV-positive patients more than doubled. In addition, the overall mortality rate among patients increased. Hence, sero-negative patients were either crowded out or admitted at a later stage of infection (Floyd and Gilks, 1996).

Adding to these direct effects of HIV/AIDS, the increase in opportunistic diseases among sero-positive people increases the risk of infection with opportunistic diseases for sero-negative people. Hence, this implies a higher prevalence of opportunistic diseases among the whole population. Despite Malawi having a very successful Tuberculosis (TB) programme, TB case notifications have increased by a factor of 500 per cent between 1985 and 2001 (Conticini, 2004). In 2000, a nationwide survey concluded that HIV sero-prevalence in TB patients was 77 per cent (MoH, 2005). Thus, the HIV epidemic has fuelled a TB epidemic, which implies an increased demand for health care among the sero-negative population as well.

Both the direct and indirect effects of HIV/AIDS on the health sector imply a greater number of patients who require health care. Added to this, the health staff is dealing with more complicated conditions. For instance, evidence shows that HIV-positive medical patients in Blantyre stayed on average 0.5 days longer in admission than HIV-negative patients. Of those patients who were never discharged, HIV-positive people on average died two days later compared to HIV-negative patients (Lewis et al., 2003). The fact that HIV/AIDS patients on average stay longer implies that they are more costly. A study from a hospital in Zimbabwe showed that the cost per in-patient stay was twice as high for HIV/AIDS patients compared with other patients, mainly due to their longer stay in hospitals (Hansen et al., 2000).

However, it is feasible that the scale up on ARV provision will reduce the increased burden of HIV/AIDS on the health sector in the short/medium term. The number of patients seeking care for opportunistic infections is likely to decrease when sero-positive people become healthier. In the long term, though, the provision of ARV means that more and more Malawians will become eligible and in need of health care as ARV is a life-time commitment.

To what extent the number of patients will increase depends primarily on two variables, assuming that widespread viral resistance to ARVs is not generated: the mortality rate of ARV patients and the number of new cases of HIV infections. In order to determine the future burden of the ARV programme on the health sector, one can think of different scenarios. In the first scenario, the death rate of people on ARV continues to be low and the incidence of HIV infection will remain at its current level. This implies that there will be an explosion of ARV patients and, consequently, the burden on the health sector will increase every year. In the second scenario, the mortality rate is still low but the number of new infections decreases. In this case, the health sector will only temporarily be burdened by the ARV programme, which in time will be reduced in scale. Lastly, one can

¹¹¹ This survey was conducted in eight MoH and CHAM hospitals located in six different districts: Salima, Machinga, Nsanje, Mulanje, Lilongwe and Rumphi.

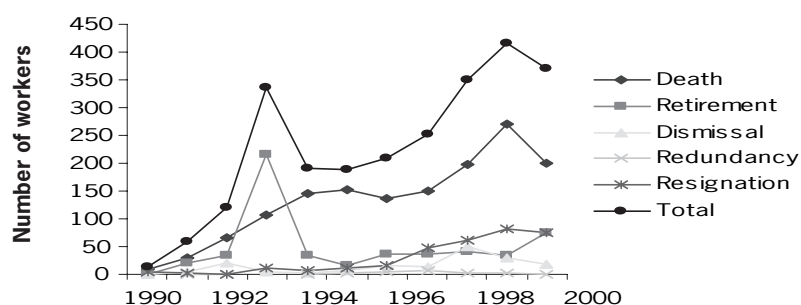
think of a situation in which the death rate is low but the successful treatment of infected people encourages high-risk behaviour. That behaviour will lead to an increase in infection rates. The outcome of such a scenario will be an ever-increasing number of ARV patients, which will consume a large share of the GDP (Over, 2004).

In the case of Malawi, it is difficult to know which scenario is most probable. In order to expand treatment efforts, there are two issues that most likely will be in focus. The first one is human capacity. Today, every health centre commits one clinical officer, a nurse, and a clerk for ARV provision. However, the vacancy rates amongst nurses and clinical officers are very high, and evidence shows that already the lack of human resources capacity has created long waiting lists in high burden centres (Makwiza et al., 2005). The second outstanding issue is sustainable funding. Although the government of Malawi contributes indirectly to the scale-up of ARV by providing infrastructure and health personnel, the programme relies mainly on funding from the GFTAM. The current commitment of funding lasts until 2008 and, as pointed out by NAC, one of the key challenges for the country will be to secure longer-term financial commitments (NAC, 2005).

4.3.3 Implications for the Supply of Health Care

In Malawi, steadily increasing attrition rates among health workers have been observed over the last 15 years (GoM/UNDP, 2002, and Makuti et al., 2004). Figure 11 shows the causes of attrition identified within the MoH during the years 1990–2000.

Figure 11: General Attrition by Cause and Year for MoH



Source: GoM/UNDP (2002)

As indicated in Section 4.1.1, death is the main cause of attrition. It makes up 58 per cent of all cases. The number of deaths in the organisation increased particularly after 1996. Apart from mortality, attrition was mainly due to retirement and resignation.¹¹²

As previously mentioned, GoM/UNDP (2000) estimates that only ten per cent of deaths are likely to be attributable to AIDS. However, data collected during the period 1996–2002 shows that 80 per cent of the deaths among health workers were caused by HIV/AIDS-related conditions (Makuti et al., 2004).

Most occupational categories among health workers have a higher mortality rate than the average population (GoM/UNDP, 2002). How-

¹¹² Resignation increased from 1996 when the health service was liberalised and many health workers moved from the public to the NGO/private sector (GoM/UNDP, 2002).

ever, research is inconclusive regarding which occupational category that has been most affected by deaths. It seems as if different occupations have been hit at different points in time (Makuti et al., 2004).¹¹³

Health care workers report that they resigned due to: poor remuneration (79 per cent), poor working conditions (16 per cent), and poor future outlook (5 per cent) (Makuti et al. 2004). Although HIV/AIDS is not mentioned as a direct cause of resignation, it is likely that in many cases the disease is a contributing factor. For instance, 90 per cent of Malawian health workers perceive that they are exposed to a high or very high risk of HIV/AIDS infection (Makuti et al., 2004). One study of midwives in Malawi found that the epidemic was one of the factors which pushed midwives out of the public health sector as the exposure to AIDS was perceived as greater there than in the private health sector. This was because the public sector, in contrast to the private sector, did not provide employees with risk allowance, health insurance, or post exposure prophylaxis (Skov Ostergaard, 2003).

It is difficult to specify how many new recruits are needed in the future to replace the loss of personnel attributed to HIV/AIDS. Estimates of the total projected loss of health personnel have taken into account attrition related to death, emigration, resignation and retirement.¹¹⁴ According to these calculations, the loss of health personnel amounts to 5 521 staff between the years 2003–2013. Combined with additional staff requirements due to the increased demand, etc. the number of new recruits needed amounts to 14 923 staff. This in turn implies that the intake of medical school students needs to increase by 188 per cent during the ten-year period (Hornby and Ozcan, 2003).¹¹⁵ Several measures have been taken to increase the availability of health staff. For instance, the intake of trainee Medical Doctors, Clinical Officers and Medical Assistants to training schools has been tripled since 2001. Nonetheless, that is far from sufficient (DFID-Malawi, 2005).

4.3.4 Impact on Service Delivery

HIV/AIDS strains both human and financial resources in the health sector. This, in combination with the increasing number of patients, creates an increased workload for the remaining workers. Hence, as many as 90 per cent of health care workers said that their workload was increasing, primarily due to HIV/AIDS but also due to high vacancy rates among health staff (Makuti et al., 2004).

One of the reasons why the workload is increasing is due to an observed increase in absenteeism during recent years. Although absenteeism is poorly recorded, health care workers report that it has increased because of HIV/AIDS. One study showed that on average, 25 per cent of health care workers had been absent for various durations during the seven-day period before the survey was conducted. Furthermore, female health care workers, nurses, and staff in the 25–39 year age bracket were particularly inclined to be absent (Makuti et al., 2004). Another study

¹¹³ The highest death rates within the MoH during the period 1992 to 2000 were found among Laboratory Technicians, Clinical Officers, and Environmental Health Workers. However, data from CHAM and MoH facilities from 1996 revealed that the highest death rates were among clinicians and nurses. This shifted in 1998 when senior administrators were most affected, while recent data from 2002 revealed that the highest mortality rate was among patient assistants (Makuti et al., 2004).

¹¹⁴ The projections are based on the following assumptions regarding attrition; Public sector: average death rate per year of 1.25 per cent, loss rate through resignation, emigration and retirement of 3.5 per cent for higher level staff and 2.5 per cent for lower level staff. Private sector: Overall attrition rate (for all causes) 2.5 per cent.

¹¹⁵ The authors did these calculations, using the number of students already in training in 2003 as the base year.

found that technicians at laboratory services only worked 44 per cent of the 42 hours they were expected to work per week (Mundy et al., 2003). This might indicate that the extent of absenteeism varies with occupational category and confirm that females carry a heavier care burden than men.

The earlier discussion of HIV/AIDS-related reasons for absenteeism applies to the health sector as well. One of the main reasons for being absent (reported in 65 per cent of the cases) is the illness of oneself and of relatives (Makuti et al., 2004). However, there are other reported reasons for showing up late at work or for early departure. They include funeral attendance, time spent in banks, declining real incomes, and the poor conditions of employment (GoM/UNDP, 2002).

In response to the increased workload, coping mechanisms have been developed. The staff members who are not absent have to take on a heavier workload and work longer hours, part-time workers are brought in, and retired health personnel are reemployed. This is likely to have an adverse impact on the quality of health care.

Although the introduction of ARVs has been a success story, other reports show that the high workload may impede the introduction of new treatment methods related to HIV/AIDS. For instance, one study found that personnel who have been trained in VCT did not provide the service because of their excessive workload (Makuti et al., 2004).

Since health care workers are not compensated for working overtime, the extra burden on them causes not only stress but also demoralization. According to one report, for example, this has resulted in cleaners and health surveillance assistants delivering health services (Conticini, 2004).

To sum up this section, we have shown how the epidemic increases the burden on an already strained health sector, especially in terms of human capacity. A high proportion of all admissions are related to HIV/AIDS, and these patients typically stay longer and are more costly than HIV-negative patients. In addition, the HIV epidemic has fuelled a brutal TB epidemic.

At the same time, data revealed how HIV/AIDS-related mortality and absenteeism undermine the capacity to deliver health care. An enhanced response to the epidemic is particularly constrained by the lack of human capacity. For this reasons, the current initiatives including SWAp and the Emergency Human Resource Programme are very timely in order to keep up with the increasing demand for health care and the high attrition rates among health care workers.

4.4 Impact of HIV/AIDS on the Education Sector

In general, the education sector constitutes the engine of economic and social development in the country. Furthermore, evidence from Malawi shows that a higher level of education is associated with a higher level of AIDS prevention knowledge and risk avoidance behaviour (NSO, 2000). Hence, the education system is not only one of the primary agents in creating sustainable economic development in the country, but also in combating the epidemic. In this section, we will summarise the impact of HIV/AIDS in the education sector.¹¹⁶

¹¹⁶ Malawi's education system follows an 8–4–4 structure: 8 years of primary school, 4 years of secondary school and 4 years of university. Because tertiary education is extremely small in Malawi (only 17 500 students are enrolled) and since data on the impact of HIV/AIDS on tertiary education in Malawi is, as far as we know, nonexistent, the following section will mainly focus on primary and secondary education. For information on the impact of the epidemic on tertiary education, see e.g. Kelly 2001.

4.4.1 Implications for the Demand for Education

It is generally believed that HIV/AIDS causes an overall decrease in the demand for education. Three major mechanisms behind the reduction in demand are usually mentioned: the demographic effect, the decreasing rate of return for education effect, and the income effect (Kelly, 2000).

The demographic impact of HIV/AIDS is expected to cause an overall reduction in the growth rate of the school age population. As we described in Chapter 1, this is due to the epidemic increasing the number of deaths among adults of childbearing age. As a result, there is a slower increase in the demand for education than what would have been the case without AIDS. Kadzamira et al. (2001) predicted that the school age population, aged six-24 years, in Malawi will be ten per cent lower by 2014 than in the no-AIDS scenario. The impact on the primary school-age population (six-13 years) would be slightly larger, 12 per cent lower, compared to the impact on the secondary school age population (14–17 years), which would be ten per cent lower.¹¹⁷

The decrease in the private return to education is due to the reduction in life expectancy caused by HIV/AIDS. Cross-country studies and data from Uganda, Zambia and Zimbabwe indicate a positive relationship between life expectancy and the demand for education (Hamoudi and Birdsall, 2004). Nonetheless, this mechanism does not seem to be important in Malawi since, as reported below, supply is the major constraint at the secondary and tertiary levels and enrolment is very high at the primary level. In 2004, 132 000 primary school pupils took the compulsory exam to qualify for secondary school, but only 98 000 past the test. In the end, 45 000 were accepted (information provided by MoE). In addition, the pool of skilled labour in Malawi is extremely small so when skilled people die there might be an offsetting effect as real wages, and subsequently, the marginal rate of return to education rises, which in turn could lead to an increase in the demand for education. However, it is noteworthy that some scholars predict a decline in the marginal productivity of skilled workers. The idea is that the death of a skilled worker reduces the average level of productivity of all the others due to network effects (see Hamoudi and Birdsall, 2004).

The third mechanism is the epidemic's adverse impact on household income, which results in a decline in the amount of money allocated to children's schooling.¹¹⁸ Moreover, as described in Chapter 2, the epidemic implies that the demand for child labour increases. Hence, these factors are likely to decrease enrolment rates and school attendance and increase dropout rates.

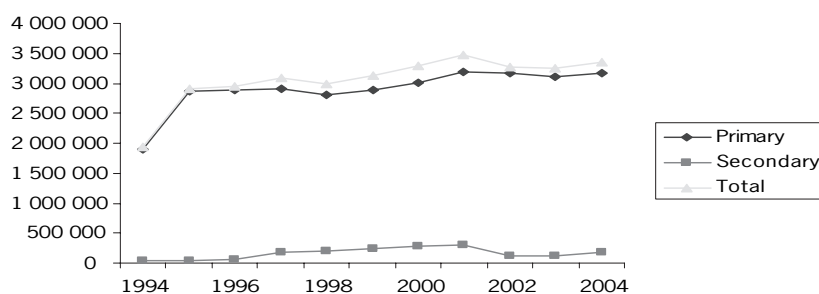
Nonetheless, data do not reveal a decline in enrolment, as Figure 12 shows. The rapid increase in the number of enrolled pupils in primary school is due to the introduction of Free Primary Education in 1994. There was a steep drop in the number of enrolled children in secondary education in 2002 according to Figure 12, which is based on school census data. However, this is probably due to data problems; it is unlikely

¹¹⁷ Kadzamira et al. (2001) used data from the 1998 Census in the Spectrum model.

¹¹⁸ In Malawi, primary education is free. However, as many as 83 per cent of parents of children in public primary schools paid for school supplies during the year 2001 (World Bank, 2004). Hence, despite free primary education, children are to some extent dependent on their caregivers for the financing of education.

that more than half the pupils left school between 2001 and 2002.¹¹⁹ The 2005 census is probably reliable, and it indicates that there were 180 000 pupils in secondary school, about the same level as in 1997.¹²⁰

Figure 12: Number of Enrolled Children by Educational Level, 1992–2004



Source: Statistical Yearbook, NSO (2004)

One of the fears expressed in the general literature is that orphans face higher schooling constraints than non-orphans, due to lack of financial means and/or foster parents who tend to give priority to their biological children when having to decide who they should enrol. Doctor (2004) used the Malawi Census data from 1998 and found that even if orphans on average live in poorer households than non-orphans, it appears as if primary school level enrolment rates for these two groups of children are similar. More recent and smaller school surveys (e.g. Kadzamira et al., 2001; Shah, 2003) have confirmed this result. They point to the critical role of extended families and communities when children experience the death of their parents. However, there are indications within the orphan group that double orphans have a lower probability of being enrolled in school compared to maternal and paternal orphans (Doctor, 2004). At secondary school level, school fees as well as the entering exams constitute a major obstacle for orphans as well as other children (Kadzamira et al., 2001).

The high overall enrolment rates in primary school in Malawi show that the education system reaches a substantial number of the poor. In this setting, the financial situation might be of less importance for enrolment. This result is supported by cross-country studies which concluded that the greatest differences between orphan and non-orphan enrolments are generally found in countries with low overall enrolment rates (Ainsworth and Filmer, 2002; Haacker, 2004a).

Although there might be changes in enrolment rates due to HIV/AIDS, the impact will probably be stronger on dropout and repetition rates; enrolling is not very costly. This is because households living with AIDS often are financially constrained and need child labour to earn additional incomes and/or to take care of sick family members.

There is some concern that HIV/AIDS related morbidity and mortality among school children might cause dropout, but it is probably a

¹¹⁹ According to a MoE official, there are great concerns regarding the data on enrolment for secondary school during the period 2002–03.

¹²⁰ Unfortunately, we do not have data on net enrolment, so the observed changes can be caused by pent-up demand (World Bank, 2004).

minor problem (Kadzamira et al., 2001). This is because the epidemic does not have its primary effect on school-age children but rather on working age population and children under five. There is no data on mortality rates for those at primary school, i.e. six-14 years, but mortality rates for the age group 15–19 declined from 5.3 to 4.1 between 1992 and 2000 according to Demographic and Health Survey 2000. However, there has been a large impact in mortality rates among those in tertiary education, from 3.6 to 8.6 for the 20–24 year age group, and this must have led to a number of dropouts.

As regards dropout rates and repetition rates, the overall internal inefficiency in the education system in Malawi as well as the continuing effects of the introduction of FPE, make it difficult to disentangle the effect of the epidemic.¹²¹ The general trend in the data is that primary completion rates have increased by approximately 15 per cent in the last decade. Still, 25 per cent of the pupils repeat each grade in primary school and after eight years at school about 60 per cent of the pupils have dropped out.¹²² Repetition and dropout rates are lower in secondary school. Poor girls from rural areas represent the group most at risk of dropping out before achieving primary completion (World Bank, 2004). Another vulnerable group is orphans. A longitudinal study found that double orphans were nearly twice as likely to drop out of school (17.1 per cent dropout rate) during the following year, compared to children with one parent dead (9.1 per cent) or both parents living (9.5 per cent) (Haries and Schubert, 2001).

There is no data that directly link dropping-out to HIV/AIDS, but 30 per cent of the primary school dropouts indicated that they left because of work. Other important reasons for dropping out of school are high monetary costs, health, and unwillingness to proceed on behalf of the child (NSO and ORC Macro, 2003). Hence, it is reasonable to suspect that HIV/AIDS indirectly increases dropout rates by impoverishing families, especially when one considers the link between HIV/AIDS and poverty (see Chapter 2).

In addition to the effects on enrolment and dropout rates, HIV/AIDS is likely to cause a higher level of student absenteeism, which disrupts schoolwork. Absenteeism from primary school is in general very high in Malawi due to the high level of poverty.¹²³ However, teachers stress that the situation has been aggravated over the past five years because pupils lack support from home. Moreover, orphans, particularly, female paternal orphans and female double orphans, are absent to a higher extent than non-orphans (Kadzamira et al., 2001).

Both non-orphans and orphans report similar reasons for being absent from school. Common reasons for absenteeism are illness of oneself, funerals, dirty school clothes, hunger and unwillingness to attend school (World Bank, 2004). Finally, student absenteeism due to funerals and looking after sick family members could be directly related to HIV/AIDS. According to Kadzamira et al. (2001), double orphans frequently mentioned these reasons.

¹²¹ With the current level of repetition rate in Malawi, the government pays the equivalent of 20 school years to get one student to complete his/her eight years of primary education (World Bank, 2004).

¹²² The high repetition rates imply that the age span between pupils in the same class is large. This in turn may increase the dissemination of the epidemic because young learners feel the pressure from over-age learners to become involved in sexual relationships at a premature age.

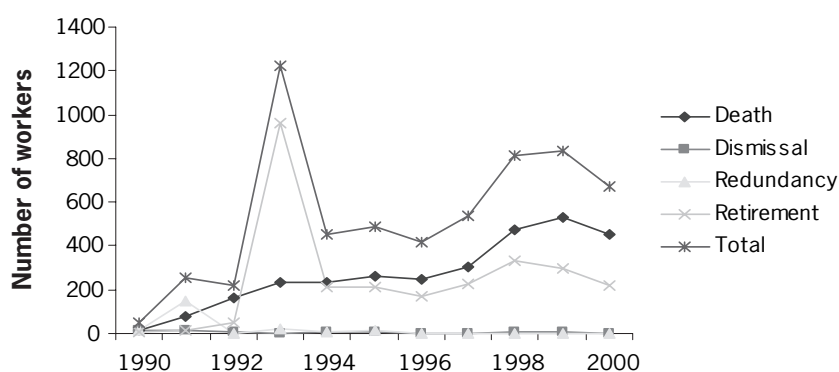
¹²³ During the year 2001, 97 per cent of primary pupils were absent one or more days. On average, absent pupils missed a total of 17 days during the year (NSO and ORC Macro, 2003; World Bank, 2004).

4.4.2 Implications for the Supply of Education

It is widely asserted that teachers are particularly vulnerable to HIV/AIDS infection.¹²⁴ However, primary and secondary teachers in Malawi have lower standardised mortality rates than the average population (GoM/UNDP 2002).

As in the public sector in general, there has been a significant increase in teacher mortality during recent years. Figure 13 shows that the number of deaths rose from only 47 in 1990 to nearly 700 in 2000. There was a noticeable increase in the number of deaths after 1996, which is likely to be due to the impact of AIDS. Retirements also increased during the period, although AIDS is not the primary explanation for retirement since most of the employees who retired had reached the age of 55. Nonetheless, there are indications of premature retirements among primary school teachers on medical grounds that partly reflect the second peak in retirement between 1997 and 2000 (GoM/UNDP, 2002).¹²⁵

Figure 13: Attrition by Cause and Year in MoE



Source: GoM/UNDP (2002)

Overall, death made up 45 per cent of the total attrition rate between the period 1990 and 2000.¹²⁶ For temporary teachers, which comprise staff under the age of 50, death accounted for as much as 85–98 per cent of total attrition between 1995 and 2000 (GoM/UNDP, 2002).

According to the GoM/UNDP's calculations at least ten per cent (221) of the total number of deaths (2 985) were likely to be HIV/AIDS-related. However, as previously mentioned, this number is likely to be an underestimate.

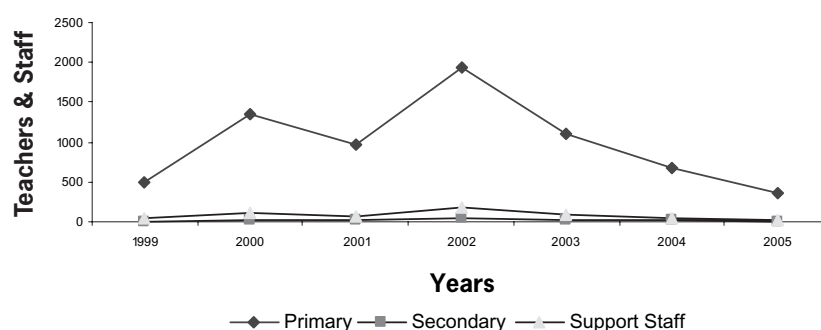
More recent data from the period 1999–2005 regarding the number of deceased workers and support staff shows that mortality continued to increase between 2000 and 2002. After that, it dropped remarkably, but still over 400 teachers died 2004 and 787 teachers suffered prolonged illness. In total, 2.2 per cent of the total number of teachers were unable to teach due to HIV/AIDS in 2004 (MoE, 2005).

¹²⁴ The rationale for this argument is that teachers often belong to the age group hardest hit by HIV/AIDS and that they are prone to engage in high-risk sexual behaviour because of their relatively high mobility, status and wealth.

¹²⁵ The first retirement peak in 1993 was caused by the enforcement of the government's retirement policy.

¹²⁶ This number is based on records of qualified teachers and support staff only.

Figure 14: Number of Deceased Teachers and Support Staff by Year



Source: Data supplied by MoE

Most impact studies on the educational sector focus on teachers and fail to recognise the potential impact of the disease on managers, inspectors, administrators, and planning officials (Badcock-Walters and Whiteside, 2000). However, there is one study from Malawi (Chawani and Kadzamira, 2004) that focuses on the effect of the epidemic on the MoE's headquarters, division offices, and district education offices. They find the same trend of increasing levels of attrition in these institutions as among teachers; death accounted for 40 per cent of attrition during 1999–2004. Apart from death, retirements and resignation (to seek higher remuneration in the private sector) were the main reasons for attrition. Lower level managers and support staff were hardest hit by death and accounted for 94.4 per cent of premature deaths (under the age of 40). The negative impact of the HIV/AIDS epidemic on educational governance in Malawi is equally severe as the loss of teachers, since this endangers the structures and system in which education is provided.

HIV/AIDS-related morbidity and absenteeism among teachers has been put forward as one of the major burdens on the educational systems in highly infected countries.¹²⁷ In general, public sector data on absenteeism is non-existent. Nonetheless, the view within the MoE is that absenteeism caused by HIV/AIDS-related morbidity has increased in the organisation (Chawani and Kadzamira, 2004, GoM/UNDP, 2002).

In the international literature, various estimates of the amount of time likely to be lost due to the morbidity of infected teachers have been put forward. These estimates vary substantially and can, therefore, not be seen as more than informed guesses. However, it is worth mentioning that they are in most cases substantially higher than what has been revealed by school surveys in Malawi. Kadzamira et al. (2001), for instance, concluded that teachers on average were absent no more than three days per term. Female teachers were more absent than male teachers, due to the heavier burden of care that lies on women. Furthermore, they found that the vast majority of both students and teachers disagreed with the statement 'our teachers are often absent from school'.

There are recent data from Zambia that seem more reliable. Head-teachers reported that absenteeism is indeed a serious problem. A study

¹²⁷ In the Zambian context, it has been estimated that 70 per cent of the total cost of HIV/AIDS on the education sector could be attributed to teacher absenteeism (Grassly et al. 2003).

showed that 42 per cent of 725 teachers had been absent during the past month. Absenteeism was in 47 per cent of the cases due to illness of oneself or of family members. The median length of absence for illness was two days and the equivalent for funerals was three days (Das et al., 2005).

In Malawi, absenteeism is also primarily caused by illness of oneself or funeral attendance, and there are indications that particularly the increasing number of funerals has decreased the contact hours between teachers and pupils in recent years (Kadzamira et al, 2001). Given the commonly reported reasons for being absent, one may suspect that absenteeism is in many cases HIV/AIDS-related.

4.4.3 Impact on Service Delivery in the Education Sector

The increasing attrition rate, absenteeism, and morbidity observed in the MoE causes both disruption and deterioration of service delivery. Teachers try to make up for time absent by providing supplementary classes in the evening and/or by putting two classes together into one class, etc (Kadzamira et al., 2001). It is also common that teachers teach subjects in which they do not have formal qualification or that primary school teachers replace secondary school teachers (GoM/UNDP, 2002).

Although these coping mechanisms are in place, absenteeism inevitably leads to disruption in the education, which is likely to affect students' performance. Evidence from Zambia revealed that an increase in teacher absence by five per cent resulted in a loss of learning achievements by four to eight per cent of average gains during the academic year (Das et al, 2005).

A similar reduction in production due to absenteeism has been observed at the MoE governance level. This has resulted in delays of some important tasks such as the production of the monthly payroll, various educational statistics, etc. In addition, there are indications of increased workload for the remaining employees (Chawani and Kadzamira 2004).

To sum up the impact of HIV/AIDS on the education sector, we have seen that according to the demographic impact of the disease, the growth rate of the school age population is expected to decrease. However, the Free Primary Education reform and lack of adequate data on net enrolment make it difficult to identify the impact of HIV/AIDS on enrolment. An anticipated decrease in the enrolment of orphans could not be traced in Malawi, which highlights the critical role of extended family and the fact that the school system reaches even the poorest households. This finding further indicates that other children might be equally vulnerable as orphans. Nonetheless, HIV/AIDS probably has its strongest impact on dropout rates and absence from school. It is difficult to disentangle the effect of HIV/AIDS on dropout rates, which are very high in Malawi, and little is known about absence. However, it seems as if double orphans have a higher risk than non-orphans of dropping out of school and that absenteeism is particularly high among female orphans.

As regards the supply side, we have shown that death-related attrition is very high and has increased substantially. However, we found no support for the general belief that teachers would be more vulnerable to HIV-infection than the average population.

To give an idea of what these findings imply in quantitative terms, Table 18 presents projections of the impact of HIV/AIDS on the future demand and supply of education in Malawi. By 2014, fewer teachers will be required in the AIDS scenario because of the disease's adverse impact

on the demand for education. However, because of mortality rates among teachers, the number of teachers who need to be trained will be twice as high (6 500) than under normal conditions (3 000). More recent data based on the estimated need for teachers show that there was a shortfall of 8 828 teachers in 2004 (MoE, 2005).

Table 18 Changes in Demand and Supply of Education for Two Different Scenarios from 2000 to 2014 Assuming no Change in Pupil Teacher Ratio

	Without AIDS	With AIDS
School population	1 500 000	1 400 000
Total Teachers 2000	50 000	50 000
Total Teachers 2014	75 600	73 600
Total increase in teachers	25 600	23 600
Teachers required per year	3 000	6 500

Source: World Bank (2004) based on Kadzamira et al. 2001

4.5 Impact of HIV/AIDS on Social Security

There is a two-way link between economic growth and a country's ability to manage social and economic uncertainty. By giving chronically poor and marginalised individuals basic protection in the advent of a shock, such as HIV/AIDS, they can better manage risk, have a quicker return to productive activity, and avoid further impoverishment once the crisis is over.

4.5.1 Social Security in Malawi

The few formal social security programmes that exist in Malawi, such as pension schemes, cover exclusively employees in the formal sector. As the greater part of the Malawian population (about 90 per cent) works in the informal sector (including smallholder farming), very few people are protected by social security. In the absence of public safety nets, most people draw on their extended family as a mean of protection.

The current pension scheme in the public sector (which is likely to be reformed in 2005–06) is non-contributory, i.e. civil servants do not contribute to its cost (Martin-Staple, 2004). The pension costs are instead paid from recurrent expenditure by government revenue. Expenditure on pensions and gratuities amounted to MK 2.1 billion during the fiscal year 2004/05, i.e. 2.3 per cent of total government expenditure. A civil servant in Malawi qualifies for retirement under the following conditions: ten years in service and 55 years of age; ten years in service and 45 years of age with Minister's consent; pensionable officer and 20 years in service; medical grounds; public interest; redundancy; or abolition of post in office (GoM/UNDP, 2002). Public employees are also entitled to sick leave with pay for six months, as well as death gratuities and coverage for funeral expenditure for the remaining family members (GoM/UNDP, 2002). In addition to the pension scheme, the government introduced a legal ruling on severance pay in November 2004 that covers both private and public sector, but there have been some complications with regard to the implementation of this policy.

For individuals outside the formal sector, social security barely exists, although several temporary aid programmes have been implemented in response to extraordinary situations such as droughts (Haddad and Zeller, 1996). However, the Poverty Reduction Strategy Paper (GoM, 2002)

contained the implementation of social safety nets as its third pillar, and today the government of Malawi provides two types of means tested safety net interventions for the poorest. These are productivity enhancing interventions for the transient poor (the 30 per cent of the population who could move out of poverty) and welfare transfers to the chronically poor (the poorest five to ten per cent of the population) (GoM, 2002). The productivity enhancing interventions consist of the Targeted Input Programme (TIP) for capital-constrained poor and Public Work Programme (PWP) for land-constrained poor. The welfare transfers include targeted nutrition interventions for malnourished children and mothers as well as direct transfers to vulnerable groups, such as orphans, the elderly, and chronically ill, who are not covered by any of the other programmes. During 2003/04, 1.7 million farm families received inputs under TIP and 92 000 benefited from public work programmes (GoM, 2005).

4.5.2 Impact of HIV/AIDS on Social Security

HIV/AIDS influences the formal social security programmes in the private and public sector. On the revenue side, the pension scheme in Malawi's public sector is expected to be affected in the same way as government expenditures in general, since expenditure on pensions is financed by government revenue. On the expenditure side, the number of pensioners is likely to be unchanged initially as the disease mostly affects people younger than the retirement age. But, in the long run, a decrease in pension expenditure is expected as fewer people reach the age of retirement. Although increased mortality results in a decline in the number of recipients of old-age pensions, outlays on medical grounds, death gratuities for surviving dependents, recompense for sick leave, and other mortality and morbidity-related lump-sum benefits have already started to rise (as we gave example of in Section 4.2). They are expected to increase proportionally with HIV prevalence or mortality in the near future. According to Martin-Staple (2004), 50 percent of outlays on Pensions and Gratuities are channelled to relatives of deceased after public servants die largely due to the epidemic.¹²⁸

HIV/AIDS increases poverty, and this puts a tremendous stress on the informal social security systems that most Malawians rely on. A likely result of this is increased citizens' dependence on the state as a growing number of people qualify for safety net interventions for the poor, direct transfers, and nutrition interventions. Consequently, the need for social expenditure targeted at the poor is likely to rise.

It has been suggested that in the advent of a generalized HIV/AIDS epidemic, the way the government should deal with the social challenges is by introducing universal income replacement programmes (Plamondon et al, 2004). An example of such an intervention is a universal flat-rate pension for the elderly. The advocates of such an intervention claim that it would mitigate poverty, strengthen intergenerational support, and reduce the administrative burden of identifying a target group in a situation where many people are in need of support. However, others claim that in consideration of fiscal affordability, the case for universal social pensions is weak. Even in a highly infected country such as Malawi, where elderly households are at a greater risk of poverty than the average population, the opponents of a universal flat-rate pension claim

¹²⁸ There is some concern that the government fails to keep track of when employees die and that relatives can continue receiving the pension. However, since relatives are entitled to a death gratuity worth 60 months pension payments, there is an incentive for some to report the death of the pensioner. Nonetheless, there exists a possibility of exploiting the system.

that there is indeed a case for non-contributory pensions for the elderly but that these should target the poor elderly in order to be effective (Kakwani and Subbarao, 2005).¹²⁹

4.6 Impact of HIV/AIDS on the Safety, Security and Access to Justice Sector

In the previous sections, we have illustrated the impact of HIV/AIDS on the public sector's service provision in different areas. In many instances, these implications are tangible. For example, we can to some extent appreciate how the quality of health care decreases when staff is dying. However, HIV/AIDS also has an impact on less tangible social and economic institutions of society (e.g. the acceptance of government by the public, the security situation, etc.).

One study analysed how AIDS affects 14 Safety, Security and Access to Justice (SSAJ) Institutions in Malawi, covering the Judiciary, the Anti-Corruption Bureau, the Prison Service, etc. (ISS/MIM, 2003).¹³⁰ The authors concluded that the staffs of these institutions were particularly vulnerable to AIDS, due to a number of factors such as age, urban residence, postings away from home, wealth status, etc. In addition, there was a high degree of denial of AIDS among the employees that potentially increases their vulnerability to infection since they may not take the necessary precautions.

The mortality rates within all institutions except for two were higher than the average death rates of the population. It was not possible to establish the number of AIDS-related deaths, but 82 per cent of the total number of deaths occurred in the age group 30–49 years.¹³¹ Furthermore, it seems as if support staff and technical staff were the hardest hit by death.

The study also found that overall the productivity of all institutions had slowed down due to funeral attendance, morbidity, and so on. Moreover, there was anecdotal evidence that border posts and magistrates courts had to close owing to the lack of key staff, that the majority of the police and prison officers trained in child justice procedures had died or were sick, and that the warden/prisoner ratios had increased substantially during the past few years.

These examples illustrate how the HIV/AIDS epidemic poses a significant threat to many core institutions of the country. If the fundamental institutions, such as the police force, do not have the capacity to act when they are needed or the security of prisoners is threatened, there is a risk that the overall domestic security situation of the country will deteriorate. The Malawi National Crime Victimization Survey showed that the dissatisfaction with the police is in general high when crimes are reported (Pelser et al., 2003). However, despite this finding, the study concluded that overall Malawians still have a positive perception of both the police and the courts. Seventy per cent of the people interviewed stated that they believed the police were doing a good job and 88 per cent said the same with regards to the courts. Concerning changes in the security situation of the country, 49 per cent of the respondent indicated

¹²⁹ For a more in-depth discussion on flat-rate pensions, see Kakwani and Subbarao (2005).

¹³⁰ The following institutions within the Ministry of Home Affairs and Internal Security were included in the study: The Police Service, The Prison Service, The Immigration Department, Ministry of Justice, The Judiciary, The Ministry of Gender and Community Services, The Department of District Administration and Local Government, The Office of the Ombudsman, The Law Commission, The National Juvenile Justice Forum, The Anti-Corruption Bureau, The Malawi Human Rights Commission, and The Malawi National Committee on Community Services.

¹³¹ Unfortunately, the age structure of the employees was not specified in the study. For this reason, it is not possible to say if the age group (30–49 years) was proportionally harder hit by the epidemic than other age groups.

they believed crime in their areas of residence had increased in the past three years, whereas 38 per cent believed crime had decreased.

Hence, the overall picture is mixed, and since there are many factors apart from HIV/AIDS that affect the security situation in Malawi, it is difficult to disentangle the impact of the epidemic. Nevertheless, Pelsers et al. (2003) found a direct correlation between the times in which crop and livestock theft are most prevalent and the times of food shortages. Hence, even if the deteriorating capacity of the SSAJ institutions due to the epidemic may not have a great impact on the perception of the general security situation of the country, HIV/AIDS may have an indirect impact through its adverse impact on food security.

4.7 Conclusion and Discussion

This chapter has illustrated the impact of the HIV/AIDS epidemic on the public sector in Malawi. What emerges from this review is that the epidemic hits the public sector both on the supply side (internally) and the demand side (externally).¹³²

On the supply side, the epidemic attacks the public sector in the same way it attacks an individual, by making the whole system ill. In the case of Malawi, the public sector was malfunctioning even before AIDS, with high vacancy levels, high attrition rates, inflexible recruitment procedures, financial constraints, poor incentive structure, and a shortage of skilled staff. This implies that the Malawi public sector had an institutional vulnerability to the impact of the epidemic that has made the impact even worse.

We have also shown that the epidemic primarily exacerbates already existing problems. However, since data are lacking, it is sometimes difficult to disentangle where the routine problems of a malfunctioning public sector end and where the impact of AIDS starts (Badcock-Walters, 2005). However, there is no doubt that the capacity to deliver what the government has promised is undermined by HIV/AIDS. In order to mitigate the impact on the supply side, the disease needs to be addressed internally with a systematic response throughout all organisations in the public sector. The HIV/AIDS programs that each ministry is obliged to develop and implement are examples of such a response. Another key challenge in addressing AIDS in the public sector is to make the disease visible. In this context, systematic collection of updated data is crucial.

The impact of HIV/AIDS on the demand for public service is diverse and to a great extent sector specific. What is seen in all ministries, though, is that the lack of human and financial capacity has a negative effect on already existing public services. At the same time, there is an increasing need for new and innovative solutions to emerging issues such as orphans and ARV and these are specific for each sector.

In sum, the public sector needs to adapt its plans to the reality of HIV/AIDS at all levels of the organisation, both internally and externally. As such, the epidemic triggers change. Although the picture looks dark, one should remember that HIV/AIDS also creates an opportunity to do things differently and to change procedures already malfunctioning before the advent of HIV/AIDS.

¹³² To illustrate both the internal and external impact of HIV/AIDS on an organisation, we provide an example in Appendix A, Table 1 of the various challenges that the MoAI faces due to HIV/AIDS at different levels of the organisation and in different stages of the disease. We use Barnett and Whiteside's framework (2002:298).

4.8 Appendix A

Table 1: The Implications and Responses to HIV/AIDS Within the MoAI

	HIV	AIDS
INTERNAL CHALLENGES TO THE ORGANISATION	Prevention of infection among MoAI employees <i>Examples from MoAI:</i> Employees in the field (who are away from their spouses) engage in high-risk sexual behaviour. <i>Responses:</i> • Identify susceptible occupational groups • Implement policies to avoid transmission of HIV e.g. construct houses for the spouses in the field	High morbidity and premature deaths and retirements in the MoAI <i>Examples from MoAI:</i> High HIV/AIDS-related attrition rates and high vacancy levels among all occupational categories causes loss of institutional memory <i>Responses:</i> • Put in place information management systems • Conduct institutional human resource audit, identify key workers with special skills • Target capacity building where mortality is high
	Prevention of infection in the community <i>Examples from the MoAI:</i> Male farmers waiting outside tobacco markets in busy urban areas engage in risky sexual behaviour <i>Responses:</i> • Expand HIV/AIDS communication to rural communities	HIV/AIDS affect core activities <i>Examples from MoAI:</i> Changes the demography in farming population, implies that grandparents, women and children take productive roles without adequate knowledge of farming <i>Responses:</i> • Target training on children, women and elderly who take productive roles • Develop resource support systems and labour exchange systems at the community level

Sources: Adapted model from Barnett and Whiteside (2002), GoM/UNDP (2002), Malindi (2005) and Rau (2004).

5. Long-term Responses and Consequences

We have in previous chapters presented a tentative analysis of the short and medium-term consequences of the HIV/AIDS epidemic. The uncertainty surrounding many of our conclusions is obvious. This is even truer when it comes to the long-term effects (in this report defined as effects occurring after 2015). For this reason, we have chosen to focus our longer-term discussion on an attempt to highlight a number of key “mitigating” and “aggravating” factors which may indicate whether the situation is likely to become better or worse after 2015. The analysis ends with a presentation of various scenarios, ranging from a “disaster scenario”, in which vital political, social and economic institutions suffer from a virtual collapse, to a more optimistic scenario, in which a number of coping strategies and behavioural changes lead to a pronounced decline in new infections as well as to a strengthening of public and community-based institutions which have been mobilised to meet the challenge.

5.1 What Determines the Long Term Macroeconomic Impact?

For many years, the heading of a section in the widely spread World Bank study “Confronting AIDS” from 1997 could represent the conventional wisdom among economists analysing the long-term macroeconomic impact of HIV/AIDS: “AIDS Has Little Net Macroeconomic Impact”. While acknowledging the dramatic impact on life expectancy and human welfare in the worst affected countries, the World Bank summarised a number of reports that downplayed the macroeconomic effects on indicators such as economic growth and per capita income. The World Bank study observed that while “...the death of people with higher incomes will reduce average income.....the death of those with lower incomes raises average income, without necessarily improving the lot of any surviving individuals and despite the suffering and economic losses of the families of those who died. Further, increased spending of health care and funerals is included in GDP calculations. As a result, per capita GDP may increase.” (1997, p. 33).

One argument often put forward to sustain this rather surprising conclusion, supported by a number of studies reaching similar conclusions, was that the countries with high HIV prevalence tended to be characterised by high unemployment. In labour surplus economies, the argument went, even a dramatic increase in AIDS deaths may not have a marked effect on the growth of production and income. To quote the World Bank study again: “Other things being equal, the impact of the AIDS

epidemic will be small until the economy begins to grow and is constrained by labour supply rather than by insufficient demand" (ibid., p. 34).

It has also been pointed out in many studies of long-term impacts of HIV/AIDS that real wages for the surviving population might increase as shortages of labour could develop.

A parallel has sometimes been drawn with the "Black Death" epidemic in Europe in the mid 14th century, which drastically reduced the man/land ratio and was followed by a prolonged period of rising rural wages. There are, however, more differences than similarities between the Black Death and HIV/AIDS. The former was a one-off event: in just a few years, between one-third and one-half of many countries' entire populations were wiped out. The demographic impact was much greater than that of HIV/AIDS – in the short term.¹³³

The suddenness of the Black Death disaster made it impossible for people to develop coping strategies. The creeping, long-term nature of HIV/AIDS, on the other hand, makes the analysis of how people and institutions adjust to the epidemic the crucial issue.

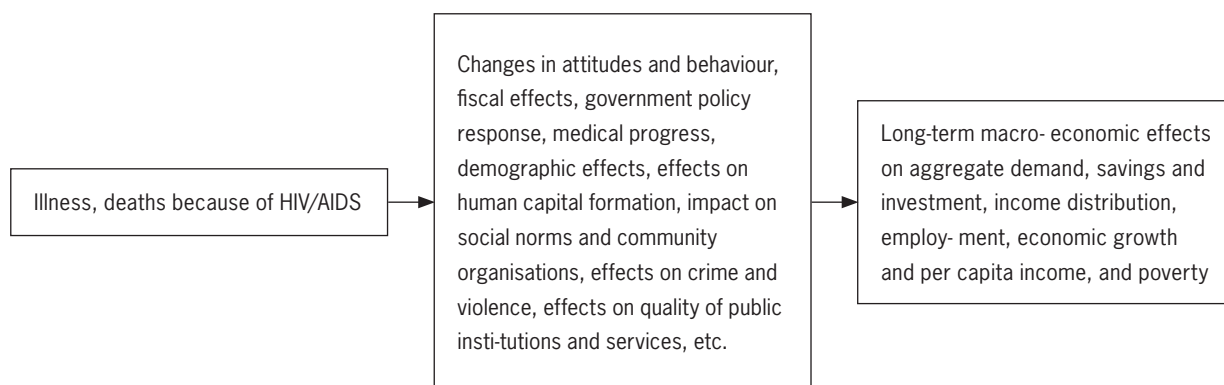
As yet, we know far too little about socio-economic and cultural coping mechanisms to draw any firm conclusions. But as stressed earlier, scattered evidence indicates that many adjustment mechanisms are already at work in Malawi.

While the positive impact of many adjustment mechanisms must be acknowledged, the macroeconomic impact is likely to be far more serious than indicated in the first wave of macroeconomic studies, some of which were summarised in the 1997 World Bank study. This more pessimistic assessment is also shared by many of the more recent studies (for references, see Chapter 3), including studies made by the World Bank (Bell et al. 2003) that indicate that the negative impact on economic growth and per capita income is likely to be highly significant for countries with an HIV prevalence of ten-fifteen per cent and above.

It must, to begin with, be stressed that the development of per capita income is a highly misleading indicator of long-term effects on welfare; if the poor are over-represented among the victims of a deadly disease, average income goes up! The links between the impact of HIV/AIDS and income are also extremely difficult to isolate and measure. Conventional long-term projections of population, employment, investment, and productivity that do not take adjustment mechanisms and social and political factors into account are likely to miss the most decisive factors determining the long-term consequences. In countries with an HIV prevalence of only one or two per cent, it may be legitimate to disregard, in a macroeconomic model, the effects of HIV/AIDS on factors such as social cohesion, the quality of public institutions, changing social and family norms, etc. However, in countries as severely affected as Malawi, it is these social, cultural, political and institutional factors that are likely to have the major long-term effect on future macroeconomic developments.

The way we interpret the links between HIV/AIDS and the long-term effects of the disease could be illustrated in the following way:

¹³³ A more relevant comparison as to the demographic impact could perhaps be made between HIV/AIDS and the slave trade (see, for example, Egerö, 2002). Just like AIDS, but contrary to the Black Death, the slave trade took place over a long period of time, and it was – just like HIV/AIDS – selective in the sense that it deprived the worst affected countries of a large part of their most productive age groups of the population.



In the following section, we will make an attempt to discuss, based on the analysis in preceding chapters, a number of factors which we think will determine the outcome in the right-hand box, i.e. long-term macro-economic and socio-economic consequences without, however, making any attempt to quantify the effects. Given the large number of unknowns we are, indeed, highly critical of all economic forecasting which gives a false sense of precision to guesses about the long-term effects of HIV/AIDS.

5.2 Mitigating Factors

5.2.1 Knowledge Is Widespread

As emphasised earlier, a number of field studies and surveys have documented the fact that public knowledge of HIV/AIDS, and of how the epidemic is transmitted, is very high in Malawi. For most people, AIDS is so present in everyday life that its existence cannot be denied, and although the disease remains subject to many myths and prejudices – and false rumours continue to be spread, for example saying that the use of condoms causes AIDS or impotence – most people have the basic knowledge required to protect themselves. Even in remote rural areas, the overwhelming majority of the population knows that HIV/AIDS is a deadly disease and that it is sexually transmitted. According to one survey (Tawfik 2000, quoted in Kaler 2004(b), p. 289), over 90 per cent of Malawian respondents, male and female, said that they “worried a lot” about contracting the disease.

Various surveys show that respondents vastly overestimate the transmission probabilities of HIV. For example, when asked to estimate the chances of becoming infected from one single act of sexual intercourse with an infected person, over 90 per cent of the respondents in a survey from 2001 answered that infection was certain or highly likely (see Bignami-Van Assche et. al. 2005). The same survey also showed that people in Malawi who have asked to be tested tend to overestimate the risk that they themselves are infected. While this may, according to some observers, increase the likelihood of high-risk behaviour – “So what, I will die soon anyhow!” – the rising willingness to undergo VCT is highly encouraging.

The implication of these observations is that the first, important stage – a high level of public awareness of the existence of HIV/AIDS, including widespread knowledge about the dangers associated with high-risk sex – has been reached in Malawi. The key issue in the future will be to translate knowledge into behavioural change, which is the weak link in the struggle against the epidemic.

5.2.2 Attitudes Are Changing

If knowledge is the first step in the fight against HIV/AIDS, changes in attitudes represent the second and changes in behaviour the third.

To judge from the information received from key informants interviewed during our visits to Malawi and from a number of recent field studies, the fact that basic knowledge about HIV/AIDS has become as widespread as it is today is due to a number of different factors, such as public campaigns and information through public health centres (see also Chapter 1). But a large and growing number of local authorities, or chiefs, community-based organisations, faith-based organisations, and traditional healers have also been active in spreading the message, as have a number of priests who are more open today than just a few years ago about the cause of death in connection with funerals. Life skills education, including AIDS information, is included in the curriculum of the regular education system. Peer information, not least among the youth, has also played an important role (see, for example, Kaler, 2004a) and adolescents in Malawi are today getting their information about sex from many different sources (although some of these sources may spread highly inaccurate information).

What Malawi appears to be undergoing is a quite remarkable increase in openness about what has traditionally been taboo: sexual behaviour. This openness – between wife and husband, parents and children, teachers and pupils, colleagues at the workplace, and among young people themselves – has its obvious limits, of course, as sexual behaviour is a sensitive issue in Malawi as well as in the rest of the world. In addition, the influence of high-risk initiation ceremonies and traditions remains strong. Nonetheless, the changes that are taking place are a symptom of a possibly substantial shift in attitudes that underpins long-term changes in actual behaviour.

While still a serious problem, stigma and discrimination are likely to be gradually reduced as a consequence of increased knowledge and openness. The increasing number of deaths also serves to reduce stigma; today virtually every adult in the country has a friend or relative who has died from AIDS. According to organisations working with people living with HIV/AIDS, stigmatisation remains a serious problem, however. A positive step towards an improvement could be if more high-level politicians and celebrities “came out” and revealed in public that they are HIV-positive.

Key to reducing the spread of HIV/AIDS is openness, non-stigmatisation, and voluntary counselling and testing (VCT). HIV tests are free of charge in Malawi, but accessibility and transport costs act as obstacles, especially in remote rural areas. Much remains to be done to expand VCT facilities. A highly promising sign is that a large majority of people questioned have expressed that they want to be tested, and that they want to know the results. Also encouraging is the fact that, according to one survey (deGraft Johnson et al., no date), two thirds of men and three quarters of women stated that they preferred to learn of their test results with their partners present.

5.2.3 Sexual Behaviour is Changing – Slowly

As emphasised several times in previous chapters, there are also signs of behavioural changes already taking place in Malawi. Condom use is increasing, albeit slowly, but condoms are still both insufficiently available and surrounded by hostile propaganda and negative rumours.¹³⁴

¹³⁴ See, for example, Kaler (2004 a).

Scattered and sometimes anecdotal evidence indicates that commercial sex workers have found it more difficult to get customers in recent years. The desperate economic situation of many girls and women may have increased the number of females involved in commercial or transactional sex, but men are said to be getting more cautious, especially when engaging in unprotected sex with “bar girls”.

According to several of our interviewees, both men and women are believed to reduce the number of sexual partners, but reliable data is not available. Qualitative interviews (see Smith & Watkins, 2004) indicate that women worry more than men about contracting the disease from their husbands/partners, and married women who suspect that their partner is being unfaithful are reported to use divorce to reduce their risk to an increasing extent. According to the same source, men resort to slightly different preventive strategies, such as fewer partners and more careful partner selection – including, unfortunately, a search for younger and younger girls. However, some men also proclaim that they have become completely faithful because of their concern about AIDS, often specifically attributed to seeing someone die of AIDS. There is, however, also some evidence that the median age at which women have sex for the first time has been declining for a number of years (see Munthali et. al. 2004).

According to survey data and well-informed observers (personal communication with specialists in Malawi), certain traditions which accelerate the spread of the disease – such as widow inheritance, female circumcision, and other initiation ceremonies which have been described in previous chapters – are becoming questioned by many community-based organisations and traditional authorities. The generalised knowledge about how HIV is transmitted has also led to an increased awareness of the need to use sterile blades when, for example, male circumcision is carried out.

While it is still too early to draw robust conclusions, it does appear as if HIV prevalence, or at least the number of new infections, has peaked in Malawi. In Lilongwe, HIV prevalence has been going down for the last seven years, as it has in Blantyre, although somewhat less (personal communication NAC). Given the high level of knowledge and the changes in attitudes that are clearly visible in Malawi, there is every reason to believe that behavioural changes will follow, albeit possibly with a rather long time lag.

5.2.4 Improved Cooperation between Government and Civil Society to Confront the Epidemic

The HIV/AIDS disaster may have the positive side effect of bringing people together to confront the disease. While there are also, as will be discussed later on, many symptoms of an erosion of social cohesion and trust in AIDS-stricken communities, many community-based organisations (CBOs) have become strengthened as a direct consequence of local campaigns and voluntary work related to HIV/AIDS. Cooperation has also, by and large, been improved between government institutions and CBOs, NGOs, and traditional authorities.

In this context, it may also be mentioned that the Malawian society in many respects appears to be better equipped to cope with HIV/AIDS than some of the neighbouring countries. Urbanisation, although accelerating rapidly, is still in its infancy in Malawi, and problems with numerous street children, drugs, and violent youth gangs are largely absent. Traditional safety nets, based on the extended family, are under

severe strain as a consequence of years of economic hardship aggravated by HIV/AIDS, but community-based organisations based on solidarity and mutual help have not collapsed; rather, they are being strengthened in at least parts of the country, although the picture is mixed. In addition, Malawi has, in comparison with many other AIDS-stricken countries in Sub-Saharan Africa, a traditional lack of civil strife and of ethnic or religious conflicts, and a strong sense of national identity.

There are, however, also worrying tendencies related to crime and conflict which will be discussed in Section 5.3.

5.2.5 Government Policies Are Basically Sound

As will be further discussed in Chapter 6, present government policies in Malawi are, in our view, basically sound. Human and financial resources are, however, exceedingly scarce.

5.2.6 Prospects for International Support Are Relatively Good

The issue of international support to confront HIV/AIDS will also be discussed in Chapter 6. Suffice it here to stress that prospects for a continuation of a high level of international support appear relatively good.

5.2.7 ARV and Future Medical Progress

The Malawian government has, as discussed earlier, presented highly ambitious plans to scale up its ARV programme. The Ministry of Health has done admirable efforts in this area. Provided that international financing is made available and that Malawi's already strained health system can cope with the additional burden, the number of patients receiving appropriate treatment is expected to increase dramatically over the coming few years. There are also ambitious plans to scale up prevention efforts related to mother-to-child transmission.

The positive effects of this development are obvious, not only in humanitarian terms. If properly handled, ARV treatment will prolong the lives of HIV-positive patients, avoid losses of prime-aged adults, and, in addition, greatly reduce the risk of transmission if people living with HIV practice unsafe sex. There is, however, also a danger that HIV-positive patients taking ARV drugs engage in more high-risk behaviour, knowing that they are already infected.

It is possible that successful ARV therapy, while a heavy burden on the health system in the short term, may prove to release resources in a medium to long-term perspective. Patients with HIV-related diseases presently occupy around 70 per cent of Malawi's hospital beds, and a very high share of all visits to clinics is connected with HIV/AIDS. If ARV therapy facilities are expanded, and medicines keep getting better, the number of patients with AIDS or opportunistic infections such as TB may go down drastically, thereby eventually releasing health care resources. As will be further discussed in Chapter 6, the future financing of the scaling-up of the ARV programme is subject to high uncertainty, however.

While optimism as regards the introduction of an effective AIDS vaccine in the foreseeable future is limited, the price of ARV drugs is likely to continue to go down as their quality continuously improves. For example, a new pill that only needs to be taken once a day will soon be introduced (personal communication from HIV researchers at Karolinska Institutet, Stockholm, Sweden). The danger of resistance should also be kept in mind, however.

One long-term implication of the scaling-up of the ARV treatment is that the number of HIV-patients living relatively normal lives is likely to

increase substantially by the year 2015. To assess the dynamics of the epidemic, HIV incidence – i.e. new infections as a share of total population – may be a better indicator than HIV prevalence, as the latter figure includes HIV-positive patients on ARV therapy. Another implication is that long-term demographic developments will differ considerably from all projections that were made before treatment was available.

5.2.8 Dependency Ratios May Improve by the Year 2015

If we assume an average time lag of 7–10 years between HIV infection and death from AIDS, the impact of AIDS on Malawi's population and workforce by the year 2015 could be assessed with some certainty, as the people who will die before 2015 are already infected. In absolute numbers, this would imply the premature death of almost one million people, or close to ten per cent of the present population. The vast majority of these deaths would affect adults in their most productive years.

There are, however, many unknowns. To begin with, the envisaged scaling-up of the ARV therapy may lead to a considerable decline in the number of HIV-positive people who die before 2015. In an optimistic scenario, perhaps over one third of the population presently infected by HIV will be alive ten years from now. With improved and cheaper drugs, this figure could become even higher.

Another key factor affecting the labour force ten years from now is fertility, which in Malawi has been going down for a number of years. This tendency is likely to accelerate further, not least because of the impact of HIV/AIDS. Women are highly over-represented among HIV-positive young adults (15–24); the female/male ratio in this age group is estimated to four or five to one. The implication of this grim picture is that large numbers of women are infected very early, and are projected to develop AIDS before the end of their normal childbearing years, leading to a substantial decline in birth rates.¹³⁵

Fertility is, however, also dependent on a number of unknowns. Experience from other countries indicates, for example, that high rates of adult mortality are strongly associated with high fertility (see, for example, Kalemli-Ozcan, 2005). It is also well known that the situation of women in general, and of women's education in particular, has a very strong effect on fertility. If large numbers of girls are dropping out of school because of HIV/AIDS in the family, fertility may actually increase.

Despite these caveats and partly contradictory factors determining fertility, it is, in our opinion, highly likely that the dependency ratio (the non-working age population divided by the working age population) will have begun to improve by the year 2015. The effects on economic growth and per capita income of the changed age structure of the population are also likely to vary depending on the time perspective we use. Thus, while the demographic structure deteriorates drastically in a short-term perspective, as a result of many deaths in the most productive ages, the demographic pyramid may, in a medium-term perspective, become less unfavourable. The share of old people is going down – from an already low number – and the combination of large groups of young people moving into adulthood and a declining birth rate will drive down the dependency ratio. When the incidence of HIV/AIDS begins to decline markedly, as it will sooner or later, the proportion of prime-age adults in the total population will rise further.

¹³⁵ This section owes some ideas about effects of AIDS on fertility and dependency ratios to Arndt (2002), whose discussion about these issues in the context of Mozambique is partly applicable to Malawi.

The long-term demographic scenario is, in other words, far more encouraging than the short-term outlook, although every demographic forecast is highly dependent upon a number of unknowns. The burden on extended families may ease considerably and a higher proportion of the population are likely to be in their most productive age. Despite the existence of many children infected through mother-to-child transmission, the HIV prevalence among children is very low, and most of the children who are infected will probably die before the age of five. If the group currently under 15 can learn to avoid becoming infected to the same extent as their parents, the dependency ratio may be drastically improved by the year 2015 and for several decades afterwards.

5.3 Aggravating Factors

5.3.1 Long Term Implications of Increased Poverty and Vulnerability at the Household Level

As repeatedly emphasised in this report, poverty and vulnerability are likely to increase as a direct consequence of HIV/AIDS. Margins are small or non-existent. For the majority of Malawians living in poverty, the short and medium-term effects on families suffering the loss of an adult breadwinner dying (from AIDS or from any other disease) are devastating. Malnutrition, already widespread, is likely to increase in a medium-term perspective, making people more vulnerable to all kinds of diseases, including HIV/AIDS.

Traditional safety nets, largely based on the extended family, will come under increasing strain in the coming decade. In our view, the period up to 2015 is in many respects crucial: if a collapse of family and community-based systems for care and upbringing of the growing number of AIDS orphans in coming years can be avoided, the demographic scenario presented earlier brings hope for an easing of the burden on grandparents and other kin in a longer-term perspective. If, on the other hand, a large number of extended families and other safety nets break down under the pressure of poverty aggravated by HIV/AIDS, Malawi will witness a number of worrying social problems – accelerated urbanisation spearheaded by children and adolescents, child prostitution, increased crime and violence, and so on – which will have a pronounced effect on macro developments after 2015.

In a more narrow economic sense, the long-term macroeconomic consequences of a large number of households and individuals falling deeper and deeper into poverty are likely to be that aggregate demand and employment outside the subsistence sector remains stagnant. Household savings are also likely to remain appallingly low.

As a result of the forced sale of assets that HIV/AIDS-stricken households have to resort to in order to cope with the additional burdens, a deterioration of the distribution of income and assets is likely to accompany the epidemic. Households with financial resources will purchase the assets – consumer durables, cattle and, sometimes, even land – that the impoverished households are forced to sell. As a result, the composition of aggregate consumption will undergo certain modifications, possibly in the direction of increased demand for imported “luxury” goods, with a concomitant reduction in demand for labour in Malawi. The “globalisation” of life styles and consumption patterns, not least among the youth, may work in the same direction (see further Section 5.3.4).

The coping strategies that affected families will adopt are, as described in previous chapters, of very different kinds. Thus, while adjust-

ment mechanisms related to norms of sexual behaviour can be expected to mitigate the spread of the disease, others may have the opposite effect. For example, the alarming tendency for women and young girls to engage in transactional sex as a survival strategy, and the increase in child labour and trafficking that is already being observed, are aggravating factors that reduce the chances of halting the spread of the epidemic.

5.3.2 Impact on the Public Sector

One direct macroeconomic effect of HIV/AIDS is to lower economic activity, thereby lowering tax revenue compared with a non-AIDS scenario. A second direct effect is the loss of experienced personnel in the public sector, leading to a lowering of the quality of public services in areas such as health, education and in the public administration in general. Another effect is to increase the need for public spending on health and social programmes, including support to orphans.

Fiscal margins are small or non-existent, and the combined effect of lower tax revenue and increased spending needs may be large fiscal deficits and inflation. The implications on the real economy of large financial disequilibria are difficult to measure, but they are certainly not positive, and Malawi's recent history shows that it is very difficult to come to grips with budgetary deficits.

The erosion of human resources in key public institutions due to HIV/AIDS is a severe problem in all sectors, but health and education are, because of their importance for the formation of human capital, absolutely strategic. Malawi's health system has also suffered from increased pressure because of HIV/AIDS and a massive exodus of especially nurses to other countries (mainly the UK). In a short-term perspective, the large number of HIV-patients, together with the envisaged scaling-up of ARV therapy, will crowd out the treatment of other, non-HIV-related diseases. Of direct relevance for the spread of HIV is the fact that resources are very scarce for the treatment of other sexually transmitted infections (STIs) (when patients seek such treatment, which is often not the case); it is a well-established fact that untreated STIs such as herpes or syphilis increase the risk of transmission per sexual exposure manifold.

In the education system, the combined effect of attrition and deaths among teachers and education managers and increased drop-out rates among children and adolescents is to slow down human capital formation in the coming generation of adults. In addition, the loss of many experienced workers and professionals will reduce the transfer of knowledge and skills from one generation of farmers, workers, and professionals to the next.

All these negative implications for the accumulation of human capital will have a long-lasting impact, and primarily affect economic growth in a long-term perspective.

The weakening of key public institutions such as the ministries, the judiciary, etc., is, from a long-term development perspective, also alarming. In modern theories of economic growth, the quality of a country's institutions, in a broad sense, has gained paramount importance. Even areas that are often neglected by economists interested in economic growth, such as the police and the judiciary, have a key role to play in this context, especially in periods of crises. We could also mention that two high-ranking police officers in Lilongwe we interviewed expressed serious concerns about the impact of HIV/AIDS. According to our interviewees, the rising trend of criminal offences due to poverty and

AIDS they described in today's Malawi could be regarded as a serious threat to security, and the large losses of experienced police officers due to AIDS have aggravated the situation further.

5.3.3 Long Term Effects on Productivity

As discussed earlier, one immediate effect of HIV/AIDS is to reduce productivity at the workplace, i.e. to increase costs of production and/or lower the quality of the services provided. The mechanisms are manifold: increased absenteeism and attrition, a generalised decline in the health status of the population, disruption of production, the loss of experienced workers and professionals, reduced incentives for investment in training of employees, and loss of transfer of knowledge, to name a few.

Some of these effects may be transitory in the sense that they are directly related to the incidence of illness and death. Others, however, will have a longer-term impact. The lowering of investment in human and physical capital as compared to a non-AIDS scenario will, in particular, affect productivity long after 2015.

The fact that malnutrition affects a large number of children in AIDS-stricken families also impairs learning and working capacity, in severe cases for the entire lifetime, with long-lasting effects on the stock of human capital.

5.3.4 Globalisation and International Competitiveness. Is Malawi Caught in a Poverty Trap?

Malawi cannot, so far, be regarded as a winner from globalisation. A small, landlocked country with a poor physical infrastructure surrounded by poor neighbours does not attract much international attention. Foreign investment remains virtually nil, and the place of Malawi in the international division of labour that is being consolidated does not appear very promising. While consumption patterns in the wake of import liberalisation and structural adjustment have become modernised for a few, the large majority of the population have not experienced many positive effects.

Malawi's export trade is poorly diversified and developed and is – apart from exports of skilled manpower – dominated by tobacco and a handful of other commodities with rather sombre world market prospects. On the import side, Malawi's small industrial base has, as a result of economic stagnation, trade liberalisation, and low productivity, been drastically reduced during the past decade. Part of this loss in international competitiveness, which is also affecting agricultural production for exports and for the domestic market, can be attributed to the effects of HIV/AIDS, but the sustained economic crisis is also due to a long history of economic mismanagement.

One indirect effect that may develop into a serious long-term problem is the fact that the high and possibly rising aid dependency may create problems related to an overvalued exchange rate. This would further undermine Malawi's international competitiveness. With the present market-based exchange rate regime, the inflow of foreign exchange in the form of foreign aid and loans pushes the *kwacha* upwards, in a way similar to the effects of what has been called the "Dutch disease".¹³⁶

¹³⁶ The expression was originally used to describe the impact on the Dutch economy of the drastic increase in export earnings that followed upon the discovery of natural gas in the North Sea in the 1960s. With strong export revenues from gas, the Dutch *guilder* appreciated against other currencies, exposing Dutch industries and agriculture to more intense competition from abroad. A large inflow of foreign aid can have a similar effect.

This remark is not intended to question the need for international assistance, which we believe is essential under present circumstances as a complement to domestic resources. However, in the absence of a coherent strategy to manage the inflow of foreign exchange and to tackle long-term development problems related to physical infrastructure, access to credit, technological progress, and high costs of production, among others, there is a danger that Malawi becomes further marginalised in the increasingly globalised economy that is emerging. The struggle against HIV/AIDS is also a struggle against poverty; improved living conditions and employment opportunities must go hand in hand with concerted efforts to confront the epidemic. If one of these struggles is lost, the other will probably be lost as well.

5.3.5 Deep-rooted Gender Inequalities and Norms of Male Dominance

As emphasised earlier, the still high incidence of HIV/AIDS in Malawi can to a considerable extent be attributed to strong traditions of male dominance in the Malawian society. And while certain behavioural changes related to sexual behaviour and the threat of HIV/AIDS may be seen already, the subordination of women in sexual relations appears extremely resilient to change.

The fight against HIV/AIDS must, in our opinion, be accompanied by an empowerment of women in all spheres of economic and social life, including sexual relations. But we do not expect dramatic changes to occur in a short or medium-term perspective.

5.3.6 Crime and Violence

The close connection between crime and poverty is well described in Malawi's Poverty Reduction Strategy Paper (PRSP), which notes:

"...insecurity makes it too risky for the poor to accumulate assets or wealth, particularly in a rural setting, as any assets or wealth are likely to be stolen. This undermines the ability of the poor to generate their own incomes and reduce their own poverty..."

Poverty and crime can also be part of a vicious circle – crime reinforces and increases poverty and poverty causes crime. For the ultra-poor, the only means of survival may be stealing food or assets from other poor people. It is therefore important that this cycle is broken." (quoted by Pelser et. al, 2004, p. 2).

The above quotation is highlighted in a book with the telling title *"Crimes of Need. Results of the Malawi National Crime Victimization Survey"*. While this study – being the first of its kind in Malawi – cannot answer the question of whether the crime rate has been increasing, it is clear that, while violent crime is very rare, property crime is exceedingly common (and, according to police officers interviewed in Lilongwe, on the rise). Thus, over 40 per cent of the almost 3 000 respondents of the survey sample experienced one or more crimes over a 12-month period in 2002–2003. The most prevalent crime was that of crop theft, experienced by 17.2 per cent of the respondents. A further 8.5 per cent of the sample had live-stock, mainly poultry, stolen from them.¹³⁷

As indicated in the PRSP, crime, and the perceived threat of crime, is a severe constraint to poverty reduction and capital accumulation. Many people are already caught in the poverty/crime trap. If poverty and vulnerability continue to increase, the situation can easily become much worse.

¹³⁷ See also, for example, CARE (May 2004), where the increase in theft and conflicts over assets in local communities is discussed.

Overall poverty reduction is, as always, important. Particular attention must be paid to the situation of AIDS orphans and the danger of rapid urbanisation without a concomitant increase in urban job opportunities for the youth entering the labour market. If the battle to provide gainful employment – in agriculture and elsewhere – for the youth is lost, there is serious danger that crop and livestock theft will plague the countryside even more in 2015 than today and that urban areas will witness a huge increase in problems related to juvenile crime, begging, child prostitution, and perhaps drug trafficking.

The human costs of a general rise in crime and violence would be enormous, and so would the macroeconomic costs.

It may also be observed that one particular type of crime and conflict bears a direct relationship to HIV/AIDS, namely the increase in what amounts to open or covert theft of assets from relatives of the deceased. The conflicts also reflect tensions between traditional law and modern legislation represented by the “Wills and Inheritance Act”. As regards conflicts over farmland, which are sometimes mentioned as a problem in some areas, the new “Land Act” will hopefully make it more difficult to violate the rights of surviving relatives.

While asset grabbing can affect everybody, the most common situation is when a woman who has lost her husband is stripped of all the household’s assets by the deceased husband’s relatives. Many orphans also stand to lose. These incidents, which are said to have increased drastically in recent years, may appear as a mere transfer of assets – tragic for the victims, but of limited economic significance – but they may be of lasting significance. The increase in the number and gravity of such conflicts over the assets of AIDS victims erodes valuable social capital, with potentially long-lasting effects on trust and cooperation in local communities.

5.4 Two Scenarios

We find it impossible to present even a tentative estimate of the development of production and income after 2015 on the basis of the many different, and often conflicting, factors and tendencies that have been discussed in this report. In a medium-term scenario, we are convinced that economic growth, investment, employment, productivity, and government revenue will suffer substantially because of HIV/AIDS. The further we look ahead on the time horizon, the more speculative any figures become. Instead of quantitative guesses, we will present two possible scenarios with very different outcomes. What the two scenarios have in common are, however, certain basic assumptions, largely taken from the previous analysis of short and medium-term effects.

5.4.1 Disaster Scenario after 2015: Economic and Social Collapse

In this scenario, behavioural changes have been insignificant, or even negative, as poverty and inequality have become exacerbated while commercial and transactional sex has increased. In addition, a generalised fatalistic attitude, with a short-term life perspective among youth and a declining interest in long-term investments in human capital, has gained ground. HIV prevalence has reached over 20 per cent of the adult population by 2015, and the health system has become totally unable to cope with the rising number of patients. VCT services as well as ARV therapy are available to only a small minority of those in need.

The overall quality of public institutions has eroded further as declining fiscal revenue and large fiscal deficits have made it impossible to

finance key services while maintaining a minimum of macroeconomic stability. Real wages in both the private and the public sector have gone down, and corruption has been increasing rapidly among government officials at all levels. The population's mood is characterised by dissatisfaction and despair, and an authoritarian regime has been installed to suppress the political opposition and occasional outbreaks of violence that take place.

Traditional safety nets have suffered from a virtual collapse in some of the worst affected regions, and a growing lawlessness in rural areas has drastically reduced farmers' incentives to keep livestock and invest in better seeds and fertilisers in order to grow higher-yielding crops. The number of AIDS orphans reached one million in 2013, and large numbers of orphans and impoverished children and adolescents, growing up in anxiety and lacking adult role models, are abandoning the education system. Many migrate to urban areas where some of them form criminal youth gangs involved in drugs, theft, and robbery. The brain drain among professionals continues. Foreign investors avoid Malawi, and even domestic entrepreneurs prefer to keep their money abroad and, if possible, to invest in businesses outside the country.

As a consequence of accelerated deforestation, largely driven by desperate people cutting down trees in order to sell high-priced firewood, land erosion has destroyed parts of the cultivable land. In addition, over-fishing and water contamination are spoiling what was once Malawi's flourishing fishing industry. The concept of eco-refugees has gained ground as tens of thousands of impoverished farmers and fishermen are trying to leave the country every year. Relations with neighbouring countries, in particular Mozambique and Zambia, have become strained as a consequence of the uncontrolled flow of migrants from Malawi (and from Zimbabwe), and armed incidents along the borders have triggered a minor arms race in the entire region.

The potential benefits from globalisation, such as foreign direct investment and good access to foreign markets for agricultural exports, have bypassed Malawi, while a certain donor fatigue with the entire Southern African region has made the international community reduce its aid disbursements to a bare minimum of food relief to the worst affected countries. International mass media also neglect Malawi's plight, especially as a far more important country, South Africa, has begun to suffer from an economic and political crisis partly related to the disastrous development of the HIV/AIDS pandemic in that country. Malawi is, indeed, caught in a poverty trap.

5.4.2 Optimistic Scenario after 2015: HIV Prevalence Is Falling and Economic Recovery Is Under Way

If the mitigating factors are realised discussed earlier, the picture becomes entirely different.

While AIDS continues to take a heavy toll in human suffering even after 2015, the behavioural changes that could be observed already in 2005 have become firmly consolidated ten years later.

Extra-marital sex, including commercial sex, has become increasingly stigmatised, and after a series of well-published trials in 2009, in which the offenders were sentenced to many years in prison, the old practice of male teachers asking their female students for sexual favours in exchange for better grades has virtually disappeared.

The increased openness about sexual behaviour that could also be observed in 2005 has become further accentuated. Parents can no longer

avoid answering their children's questions about sex and HIV/AIDS, and sexual education and information about HIV/AIDS has been established as compulsory in all primary schools as well in all teacher training. The Catholic Church has, in view of the crisis, abandoned its previous negative attitude towards the use of condoms, as have the overwhelming majority of the country's traditional authorities.

Conventional gender norms have been challenged, and partly transformed. Men with multiple sex partners are no longer admired by their peers, let alone by their female partners. The universal awareness of HIV/AIDS has also led to a slow and gradual erosion of the traditional subordination of women in sexual relations. Women have been empowered to gain more control over their own bodies and sexual lives, and the threat of HIV/AIDS has also made men much more cautious. Sexual abuse is legally defined, widely acknowledged, and severely punished, and many men have also realised the danger; after all, rape and sexual abuse of women can be deadly for the male perpetrator, too.

The economic situation of women has also improved. A plethora of cooperatives among predominantly female smallholders has developed, and micro-credit schemes supported by a number of public and private organisations and foreign NGOs are mushrooming in rural areas.

Malawi's politicians are playing a leading role in the struggle against the disease. The President mentions HIV/AIDS in virtually every public statement, emphasising that the danger is far from over, and all major workplaces have coherent HIV/AIDS programmes in place. Cooperation between government institutions and civil society has improved further, and community-based organisations, often dominated by women, have taken the initiative in launching preventive campaigns and in organising low-cost VCT programmes. Social cohesion has been strengthened, as groups of parents, teachers, adolescents, community volunteers, traditional leaders, healers and government health workers have joined forces against the deadly threat.

By the year 2015, HIV prevalence still remains rather high, around ten per cent, but the rate of new infections is continuously declining, while a high and rising share of people living with HIV receives ARV therapy. While no AIDS vaccine has been developed, ARV drugs as well as drugs to treat TB and other opportunistic infections have become cheaper and more effective. In addition, thanks to a major medical breakthrough, a malaria vaccine has been developed that the UN family distributes free of charge to all low-income countries.

Malawi's demographic pyramid has become highly favourable in the sense that the decline in HIV incidence and fewer AIDS deaths among adults, in combination with a continued decline in fertility, has made the working population as a share of the total population higher than ever before. The improvement in the dependency ratio is, according to demographic experts, expected to continue for several decades.

Most countries in Sub-Saharan Africa have also, with a few exceptions, managed to cope with HIV/AIDS without major economic or political crises. A strong regional economic recovery, which gained momentum after 2010, makes regional trade flourish. Even business magazines have begun to show a certain interest in the Southern African region. While most direct investment still accrues to South Africa and, perhaps surprisingly, to Mozambique, Malawi's comparative advantages – its beautiful landscape and pleasant climate, the friendly people, the absence of violent crime and others – are often highlighted, giving Malawi a rather profitable niche in eco-tourism and related services. The agro processing industry is

also growing rapidly. The high demand for commodities from China and other Asian countries, which began to have a large impact on world market prices already in the beginning of the 21st century, has continued and made Malawi enjoy what experts judge to be a lasting improvement in the country's terms of trade. The foreign debt, which had increased to dangerously high levels between 2005 and 2009, had been written off in its entirety in 2010. Thanks to good governance and continuous progress in economic growth and tax collection, Malawi's aid dependency has become drastically reduced by 2020.

According to UNDP's Human Development Report 2020, Malawi remained one of the poorest countries in the world. It also failed to meet the Millennium Development Goal of reducing extreme poverty with fifty per cent by 2015. Just the same, economic growth remained respectable, and prospects for the period 2020–2030 appeared good.

6. Policy Implications

It should be stressed that it falls beyond the scope of the present study to make an evaluation of the HIV/AIDS policies implemented by the Malawian Government in collaboration with foreign donors and NGOs. We have, however, many times had occasion to refer to what is being done by various actors to confront the HIV/AIDS epidemic. In this concluding chapter, we will present a brief overview of today's policies related to HIV/AIDS. Finally, we will also make a few policy recommendations based on our findings.

6.1 Present HIV/AIDS Policies

The first case of AIDS in Malawi was diagnosed in 1985, and the first government response came in 1986. The initial efforts concentrated on preventing the further transmission of the virus, but lacked both funding and a coherent strategy. In retrospect, it may be said that several years were lost that could have been used to take more concerted action long before the HIV prevalence had reached the high level it had reached by the mid 1990s.

The first comprehensive HIV/AIDS policy was formulated in 1999, the so-called National HIV/AIDS Strategic Framework (NSF). Developed through a highly participatory process involving representatives from all sectors and civil society, including faith organisations and people living with HIV/AIDS, the NSF defined priorities for the national response.

In recent years, more comprehensive HIV/AIDS policies based on the NSF have been formulated. The National AIDS Commission (NAC) was established in July 2001 to coordinate the multi-sectoral implementation and mainstreaming of national HIV/AIDS policies. The most recent HIV/AIDS strategy was launched in 2003.¹³⁸ The policy provides guidelines to all HIV/AIDS programmes in Malawi and has two main goals: (a) “to prevent the further spread of HIV infection” and (b) “to mitigate the impact of HIV/AIDS on the socio-economic status of individuals, families, communities and the nation”. These goals will, according to the policy document, be achieved by pursuing the following specific objectives:

- to improve the provision and delivery of prevention, treatment, care and support services for people living with HIV/AIDS;

¹³⁸ Government of Malawi, Office of the President and Cabinet/National AIDS Commission, “National HIV/AIDS Policy. A Call for Renewed Action”, October 2003

- to reduce individual and societal vulnerability to HIV/AIDS by creating an enabling environment;
- to strengthen the multi-sectoral and multi-disciplinary institutional framework for coordination and implementation of HIV/AIDS programmes in the country.

The overall philosophy underlying the national HIV/AIDS programme is based on

- the basic principles of human rights and non-discrimination, which “should guide all HIV/AIDS-related interventions”; and
- the recognition of HIV/AIDS not only as a public health concern but as a social, economic and development issue, and the need to mainstream HIV/AIDS into “all relevant policies, plans and programmes”.

It would lead us too far astray from our specific study to describe in detail the various components of the programme. But in order to indicate the overall approach and government intentions, we may highlight a few key areas.

As regards prevention, the programme emphasises the need for information about HIV/AIDS and the need to work in close cooperation with civil society, including community-based organisations and traditional and religious leaders, as well as traditional healers, whose important role in HIV/AIDS education is stressed. The programme is explicit in its concerns about dangerous customary practices and in the need to “sensitise and discourage traditional healers from making false claims about HIV/AIDS cures and prescribing practices that increase the risk of HIV infection”. The programme strongly endorses the use of condoms by ensuring that the government, through the NAC, undertakes to “ensure that affordable male and female condoms.....of good quality are made available to all those who need them”. Among other preventive measures can be mentioned the heavy emphasis that the HIV/AIDS programme puts on the prevention of mother-to-child transmission (PMTCT) as well as on the necessity of reducing the prevalence of sexually transmitted infections (STIs) which, it is acknowledged, significantly increases the risk of HIV infection.

A key role in prevention as well as for the treatment, care, and support of those living with HIV/AIDS. As is accorded voluntary HIV counselling and testing (VCT), and the government declares its commitment to “promote and provide high-quality, cost-effective, totally confidential, and accessible VCT services country-wide”. HIV testing should also be “routinely offered to all pregnant women attending antenatal clinics unless they specifically choose to decline”.

As regards the provision of drugs, the ARV therapy, provided free of charge¹³⁹ and expected to be expanded considerably in the coming few years, has been described earlier. If carried out according to plan, Malawi’s programme must be characterised as exceedingly ambitious in comparison with what is being implemented in virtually all other countries on a similar income level.

A programme of this kind must be regarded as virtually irreversible both from a humanitarian and political perspective in the sense that it would be very difficult to withdraw ARV drugs from the increasing stock

¹³⁹ Except in a few, private clinics where a rather low price is charged.

of patients who have already begun the therapy. The long-term commitment in terms of future demand for institutional, human and financial resources is therefore considerable.

The national HIV/AIDS policy document also contains a large number of concrete proposals directed to specific issues and target groups such as the national security forces, youth and adolescents, widows and widowers, homosexuals, people with disabilities, orphans, people engaged in transactional sex, and others. There is also a special national HIV/AIDS workplace policy.

Compared with the national HIV/AIDS policy document, though, Malawi's Poverty Reduction Strategy Paper (PRSP) from 2002 is quite weak as regards HIV/AIDS. While the need to strengthen the health care system is repeatedly underscored, the stated objective of mainstreaming HIV/AIDS into all policy areas is not sufficiently well reflected in the PRSP, which may indicate a certain lack of coherence in overall government policies. The new PRSP, envisaged to be presented in December 2005, will, hopefully, contain a more comprehensive integration of HIV/AIDS policies in the overall poverty reduction strategy.

The major problem related to the Malawi government's present HIV/AIDS policies has to do with implementation rather than with policy formulation. Lack of material and, in particular, human and administrative resources, is a major constraint. The recently introduced Health SWAp initiative (see Chapter 4), whose primary objective is to recruit, train, and maintain health workers, is expected to alleviate the heavily strained situation in the health sector, but it is still too early to assess its impact.

Despite good intentions, the availability of VCT facilities is, as emphasised earlier, highly insufficient, not least in rural areas. The same is true for ARV therapy. The crowding-out, at least in a short-term perspective, of ordinary health care services by the envisaged scaling-up of ART also endangers health interventions against other killing diseases (such as malaria), as well as against diseases of direct relevance for the fight against HIV/AIDS (such as treatment of STIs and of HIV-related opportunistic infections). The ART programme is also surrounded by question marks in terms of the future availability of financial and other resources.

Less explicable, perhaps, than the insufficient availability of VCT and ART services is the shortage of distribution outlets for condoms in large parts of the country. Even in many places where occasional sexual relations are often established, such as urban hotels and bars and restaurants, condom supply is reported to be highly erratic.

A further point of concern is the high dependency on foreign aid that characterises Malawi's HIV/AIDS policies, and which may endanger the future sustainability even of present efforts.

6.2 Donor Funding and HIV/AIDS

While it has been difficult for Malawi to obtain food aid even in times of severe drought, as experienced during the difficult agricultural year 2004–2005, foreign funding for HIV/AIDS programmes has been comparatively generous.

In previous chapters, we have presented some data on the extent of aid dependency of the Malawi state budget in general and of the HIV/AIDS programme in particular. Suffice it here to highlight a few aspects of the important role played by the donor community.

6.2.1 General

Malawi's aid dependency is high and increasing. The share of grants in government revenue is approaching 40 per cent (see Chapter 4). As a share of GDP, foreign grants are estimated to have reached 18.9 per cent in 2004/2005. With domestic savings low or negative (see Chapter 3.1.3), foreign aid in various forms can be said to finance all new investment in the country.

While we do believe that foreign aid will be important and play a largely positive role in Malawi in a short to medium-term perspective, we are deeply concerned about the long-term impact of a high and rising aid dependency. The need to manage a large number of foreign multilateral and bilateral donors, often with conflicting views and conditions as regards priorities, reporting procedures, and the like places a heavy burden on Malawi's scarce administrative resources, and may serve to reduce the country's ownership over its development policies. The financial sustainability of government HIV/AIDS policies can also be questioned if the share of funds raised from foreign donors rather than domestically becomes, or remains, very high. The danger of "Dutch disease" effects as a result of large inflows of foreign aid should also be taken into account (see Section 5.3.4).

6.2.2 Financing the HIV/AIDS Response

A large proportion of Malawi's national HIV/AIDS policies has traditionally been financed externally through earmarked funds from both bilateral and multilateral donors. At present, less than one third of HIV/AIDS-related expenditure is financed domestically and over two thirds from external sources. On the basis of committed – but not necessarily disbursed and spent – resources, the Global Fund (GF) to Fight AIDS, Tuberculosis and Malaria is by far the largest single contributor (39%). It is followed by the Malawi government (31%), the UN family (18%) and bilateral donors (12%).¹⁴⁰

The agreement with the Global Fund, signed in 2003, envisages a total amount of USD 196 million to be spent on HIV/AIDS activities over a five-year period. The allocation has four main components: voluntary counselling and testing, prevention of mother-to-child transmission, community-based home care and treatment and management of opportunistic infections and ARV drugs. In addition, there are two crosscutting components, namely health system strengthening and institutional support.

The most expensive part of the GF grant is envisaged to be the scaling-up of ARV therapy, estimated to reach 35 000 patients by December 2005¹⁴¹ and to continue to be expanded with an additional 35–45 000 new patients every year between 2006 and 2010. By the year 2010, the number of patients who have ever started ARV therapy is, according to projections from the Ministry of Health, expected to reach 245 000. The Global Fund is committed to financing the expansion up to 2008. After that, Malawi lacks a firm donor guarantee for the programme.

Among other donor initiatives could be mentioned the agreement in 2003 by four donors (Canadian CIDA, British DFID, Norwegian NORAD, and the World Bank) to establish a common pooled account to

¹⁴⁰ Data mainly taken from UNAIDS, "Financing the HIV/AIDS Response in Malawi 2005–2009", June 2005, and various documents from the Global Fund, Government of Malawi and UN agencies.

¹⁴¹ Approximately 23 000 people were on ART in June 2005.

support the implementation of the national HIV/AIDS programme. In order to alleviate problems related to the need to handle different donors with different demands and requirements, these four agencies also agreed to define a common code of conduct and to harmonise procedures for financial support.

Other global health initiatives relating to HIV/AIDS in Malawi include:

- The World Bank’s so-called multi-sector project, whose primary objective is to reduce HIV transmission and improve the quality of life of those infected and affected by AIDS;
- A large number of other programmes implemented by bilateral donors and UN agencies, such as UNICEF, UNDP and UNAIDS and international NGOs, including CARE and MSF (Médecins sans frontières).

6.3 Policy Proposals

6.3.1 To the Malawi Government

Malawi’s “National HIV/AIDS Policy” is in many respects similar to HIV/AIDS policies in other African countries. The various components of the programme – policy interventions related to prevention, care and treatment and mitigation – are addressed in a coherent way, and we strongly endorse the programme’s consistent emphasis on non-discrimination and human rights. A common observation among several of our interviewees is also that cooperation between government agencies and health workers and civil society organisations in the struggle against the HIV/AIDS epidemic has been continuously improved.

As indicated earlier, we are not in a position to assess the effectiveness in the implementation of the many different components of the HIV/AIDS programme. Our observations will, for this reason, be limited to a few general remarks largely related to emphasis.

Our first observation is that prevention work has reached a difficult stage, as it must dare to address sensitive issues while avoiding antagonising traditional customs and authorities. General information campaigns – posters, radio programmes, for example – still have a role to play, but since basic knowledge about the disease is as widespread as it is, education and information about sexual and reproductive rights must go beyond simple slogans about the existence of AIDS as a serious threat to deeper issues related to myths, prejudices, and norms of sexual behaviour. As stressed earlier, the weakest link in all HIV/AIDS prevention is not knowledge but the link between knowledge and behavioural change.

Issues that need to be tackled vigorously are, for example, dangers associated with initiation ceremonies, “dry sex”, and the importance of using condoms. Health workers and public sector employees alone cannot carry out this educational work; the outreach and credibility of the messages depend to a very large extent on the support that comprehensive and correct HIV/AIDS education is able to mobilise from community-based organisations, faith organisations, and traditional authorities and healers.

Deep-rooted male norms must be challenged. While abstinence messages are likely to have limited effects, in Malawi as elsewhere in the world, extra-marital unprotected sex must be stigmatised. This is already happening to some extent, but the process can be accelerated through, for example, school education and authoritative campaigns by leading

politicians and by local or national celebrities, especially those with high credibility among the youth.

Judging from experience from other countries that have been comparatively successful in the fight against HIV/AIDS, such as Thailand and, until recently, Uganda, it is imperative for all HIV/AIDS-related work to be able to count on the wholehearted support from the countries' highest political leadership.

In several areas related to men's sexual behaviour, education and information must be accompanied and backed up by legislation. Sexual abuse must be defined and declared illegal. Clear legal norms must be established – and enforced – as regards the age at which girls are permissible, i.e. when men are allowed to enter into a sexual relation with adolescents. Sexual relations with young girls must be criminalised and socially stigmatised. Teachers having sex with their students must be severely punished.

The empowerment of women is by far the most important road to sustained progress in the fight against the spread of HIV/AIDS. Women must be made aware of their rights, including the right to their own bodies and the right to say no to sex. Legal and social norms protecting women's rights must be enforced, and information about these norms should be included in the curriculum in the regular education system. The fact that traditional norms of male dominance in sexual relations are resilient to change makes it even more urgent to enforce changes in attitudes and legislation as soon as possible.

The high incidence of transactional sex, in which poor and vulnerable women receive some material gain in exchange for sexual favours, highlights the fact that economic empowerment of women must go hand in hand with their empowerment in sexual relations. A coherent mainstreaming of HIV/AIDS into all sectors implies that women, whenever possible, should be given priority in public income-generating programmes – agricultural extension work, micro-credit schemes, employment-generating public works and food-for-work programmes, and so on.

Another key component of prevention is to expand existing VCT facilities. As discussed earlier, it is not only – or perhaps even primarily – people's willingness to be tested that is the main problem; it is rather the lack of testing facilities in large parts of the country.

From the point of view of cost-effectiveness, an improved distribution of condoms has often been found to be a low-cost option with potentially very high benefits in terms of reducing the number of new HIV infections. In Thailand, for example, the "100 per cent condom campaign" launched in the early 1990s and directed primarily to sex workers and their clients proved to be amazingly effective. While the situation is different in Malawi – not least because HIV has spread far beyond traditional "risk groups", making the entire population a risk group – improved information and distribution of condoms is an essential component of a successful prevention strategy.

Another key issue is to improve the treatment of other sexually transmitted infections that, if untreated, greatly increase the risk of HIV transmission. To cure STIs is comparatively inexpensive and, of course, far less costly than to provide HIV patients with ARV.

The mainstreaming of HIV/AIDS policies in Malawi includes ambitious programmes for prevention, treatment, and care in major public institutions and enterprises. Private sector companies have also, in many cases, started their own HIV/AIDS programmes. While these programmes often make sense from a strictly commercial point of view –

as discussed in Chapter 3, various studies from different countries have shown that HIV/AIDS programmes can be highly profitable for the individual company implementing them – the government could do more to encourage the replication of HIV/AIDS activities in the private sector. For example, all expenses related to HIV/AIDS prevention and treatment should, in our opinion, be made exempt from taxation and be treated as any other tax-deductible cost of production.

6.3.2 Recommendations to Foreign Donors

To judge from interviews and written reports, the donor community has responded in a positive way in support of Malawi's HIV/AIDS policies. Many multilateral and bilateral donors and financial institutions, NGOs and, last but not least, the Global Fund, are showing that they are willing to assist Malawi in the fight against HIV/AIDS.

The number and diversity of foreign agencies and actors also create certain problems, however. For the Malawi government, with its severe human resource constraints, it is important to reduce the need to deal with a large number of donors with widely varying requirements as regards reporting, documentation, disbursement procedures, etc. The administrative burden is heavy. We therefore applaud recent initiatives from various bilateral donors to pool their resources in their support to HIV/AIDS programmes, as well as the so-called Common Approach to Budget Support in which four bilateral agencies (from the European Commission, United Kingdom, Norway, and Sweden) have agreed to coordinate their biannual reviews for united budget support. While these are positive steps, and with due respect for the need of the donors to monitor how their taxpayers' contributions are being utilised, we are convinced that more could be done to harmonise and streamline donor procedures.

Several components of Malawi's HIV/AIDS programme are of a very long-term nature. Despite this, they lack long-term funding guarantees. It is, in our opinion, imperative for the sustainability of Malawi's overall development policies, including the fight against HIV/AIDS, to mobilise an increasing share of domestic funds. We would nevertheless welcome explicit commitments from key donors, including the Global Fund, to continue to finance certain key activities, such as the scaling-up of the provision of ART and the sector support to the health sector (SWAp), for a period of at least ten years.

References

Chapter 1

- Afrobarometer (2004), "Afrobarometer Briefing Paper No. 12". Available online: <http://www.afrobarometer.org>
- Barnett, T., and Whiteside, A. (2002), "AIDS in the Twenty-First Century: Disease and Globalization". Palgrave Macmillan, Basingstoke, UK.
- Bisika, T., Kasote, A., Kaluwa, C., Chipendo, L., Nanthambe, M., Chimombo, L., Kingsomlewizombe, L., deGraft-Johnson, J., Zakaliya, A. (2004), "Avoiding Unwanted Pregnancy and Sexually Transmitted Infections: A Rural Malawi District Study". Center for Social Research, Save the Children Federation USA, Malawi Ministry of Health and Population, MEASURE Evaluation. Chapel Hill, N.C.: MEASURE Evaluation; 2004.
- BRIDGE, (2004), "Exploring Community Beliefs, Attitudes & Behaviours Related to HIV/AIDS", Baseline Research from Eight BRIDGE Districts in Malawi, Lilongwe, September 2004.
- Bryceson, D., Fonseca, J. F., Kadzandira, J. (2004), "Social Pathways from the HIV/AIDS Deadlock of Disease, Denial and Desperation in Rural Malawi", CARE, May 2004.
- Bryceson, D., and Fonseca, J., (2005), "Risking Death for Survival: Peasant Responses to Hunger and HIV/AIDS in Malawi". Paper presented at the International Conference on HIV/AIDS, Food and Nutrition Security organized by IFPRI in Durban, South Africa, 14–16 April 2005.
- Bota, S., Mphepo, M. A. M., Malindi, G. (2001), "The Impact of HIV/AIDS on Agricultural Extension Organisation and Field Operations in Selected Countries of sub-Saharan Africa, With Appropriate Institutional Response: Malawi". Draft Report. United Nations Development Programme (UNDP), United Nations and The Joint United Nations Programme on HIV/AIDS (UNAIDS), Food and Agriculture Organization (FAO).
- deGraft-Johnson, Paz-Soldan Valerie, Kasote, Antonio & Tsui, Amy, "HIV Voluntary Counseling and Testing Service Preferences in a Rural Malawi Population", mimeo, n.d
- Epstein, B. G. (2004), "The Demographic Impact of HIV/AIDS". IMF Publication.

- Food and Agriculture Organization and United Nations Development Programme (2004), “African-Asian Agriculture against AIDS”. Consultation on Agriculture, Development and HIV-vulnerability Reduction 11–13 December 2002, Bangkok, Thailand. UNDP; Rome: FAO, 2004.
- Frankenberger, T., Luther, K., Fox, K., and Mazzeo, J. (2003), “Livelihood Erosion Through Time: Macro and Micro Factors that Influenced Livelihood Trends in Malawi Over the Last 30 Years”. Tango International and CARE.
- Health Research For Action (HERA) (2005), “Malawi National AIDS Programme: Independent Multi-Disciplinary Review Team”. Draft Report for the second Interim period January-June 2005. August 2005, Belgium.
- Interview with Dr. Ralf Weigel at the Lighthouse Trust, Lilongwe, Malawi. Date: 2005–09–05.
- Isaksen, J., Songstad, G.N, Spissoy, A. (2002), “Socio-economic effects of HIV/AIDS in African countries”. NORAD.
- Jayne, T. S., Villarreal, M., Pingali, P., Hemrich, G. (2004), “Interactions between the Agricultural Sector and the HIV/AIDS Pandemic: Implications for Agricultural Policy”. ESA Working Paper No. 04–06. FAO.
- Kaler, Amy, “The Moral Lens of Population Control: Condoms and Controversies in Southern Malawi”, *Studies in Family Planning*, Vol. 35, No. 2, June 2004 (2004 a)
- Kaler, Amy, “AIDS-talk in everyday life: the presence of HIV/AIDS in men’s informal conversation in Southern Malawi”, *Social Science & Medicine* no. 59, 2004 (2004 b)
- Malawi Government (2002), “Malawi Poverty Reduction Strategy Paper”, National Economic Council, Lilongwe, Malawi.
- MANET (2003), “Voices for Equality and Dignity Qualitative Research on Stigma and Discrimination Issues as they affect PLWHA in Malawi”. Lilongwe, Malawi, 2003.
- Matinga, P., McConville, F. (2003), “A Review of Cultural Beliefs and Practices Influencing Sexual and Reproductive Health, and Health-Seeking behaviour, in Malawi”. Department for International Development (DFID).
- Ministry of Health (2005), “National Scaling up of ARV therapy in Malawi”, PowerPoint presentation presented by Anthony Harries at the National Conference on HIV and AIDS research and practice dissemination, 18–22 April 2005, Malawi Institute of Management, Lilongwe, Malawi
- Munthali, Alistair, Chimbiri, Agnes & Zulu, Eliya, (2004), “Adolescent Sexual and Reproductive Health in Malawi: A Synthesis of Research Evidence”, The Alan Guttmacher Institute, New York and Washington, December 2004.
- National AIDS Commission (NAC) and MOHP (2003), “HIV Sentinel Surveillance Report 2003”, Malawi.
- National AIDS Commission (2004), “Newsletter, Vol. 1 Issue 2”. Article with Harries, T., November, 2004.
- National Statistical Office (NSO) (1996), “Malawi Knowledge, Attitudes, and Practises in Health Survey (MKAPH)”, 1996.

- National Statistical Office (NSO) and ORC Macro (2001) “Malawi Demographic and Health Survey 2000”, Zomba, Malawi.
- National AIDS Commission and Reproductive Health Unit, (2003b), “National Behaviour Change Interventions Strategy for HIV/AIDS and Sexual Reproductive Health”. Malawi, Lilongwe.
- National AIDS Commission (2004), “HIV and AIDS in Malawi- 2003 Estimates and Implications”. Republic of Malawi, January, 2004.
- National Statistical Office (2005), “Statistical Yearbook 2004”. National Statistics Office, Zomba, Malawi.
- Ngwira, N., Bota, S., and Michael Loevinsohn (2001), “HIV/AIDS, Agriculture and Food Security in Malawi- Background to Action”. RE-NEWAL working Paper 1, Ministry of Agriculture, Zomba, Malawi.
- Office of the President and Cabinet and NAC (2003), “National HIV/AIDS Policy- A Call To Renewed Action”. October 2003.
- Phiri, S., Weigel, R., Housseinipour, M., Boxshall, M., Neuhaan, F. (2004), “The Lighthouse A centre for comprehensive HIV/AIDS treatment and care in Malawi”. Case Study. World Health Organisation, Geneva, Switzerland.
- Pinder, C. (2004), “Economic Pathways for Malawi’s Rural Households”. CARE Malawi, 2004.
- Republic of Malawi (2005–2009), “National Plan of Action for Orphans and Other Vulnerable Children”. Malawi.
- Rugalema, G. (1999), “HIV/AIDS and the Commercial Agricultural Sector of Kenya”. Report. FAO/UNDP, Rome.
- Shah, M. K., Osborne, N., Mbilizi, T., Vilili, G. (2002), “Impact of HIV/AIDS on Agricultural Productivity and Rural Livelihoods in the Central Region of Malawi”. CARE International Malawi.
- Shah, M. S. (2003), “Safety Net Programmes and HIV/AIDS Experience from the Central Region Infrastructure Maintenance Project (CRIMP)”, CARE International, Malawi.
- Smith, Kirsten & Watkins, Susan Cotts, “Perceptions of risk and strategies for prevention: responses to HIV/AIDS in Malawi”, *Social Science & Medicine* no. 60 (2005)
- The Chronicle Newspaper (2005), “Over Half a Million Malawians Die Due to Aids – Government”, October 4, 2005, Lilongwe, Malawi.
- United Nations (1998), “The Demographic Impact of HIV/AIDS”. Population Division, Department of Economic and Social Affairs, United Nations and The Joint United Nations Programme on HIV/AIDS (UNAIDS). Report on the Technical Meeting New York, 10 November, 1998.
- United Nations (2005), “The 2004 Revision Population Database, UN”. Available online.
- UNAIDS (2004), “2004 Report on the global AIDS epidemic”. United Nations and The Joint United Nations Programme on HIV/AIDS (UNAIDS). Geneva, Switzerland.
- United Nations Development Programme (2005), “Human Development Report 2005”. United Nations Development Programme’s Nordic Office, Aarhus, Denmark.
- US Census Bureau (2004), “The AIDS pandemic in the 21st Century”, Washington D.C., U.S. Government Printing Office. International population Reports WP/02–2.

- White, S., Kachika, T., Chipasula, M., Hendricks, S., Gomile-Chidyaonga, F., Mitole, Z., (2004), “WLSA Malawi Pilot Study Report Sexual Violence and Its Impact on Women’s Vulnerability to HIV/AIDS and on Women’s Sexual and Reproductive Health Rights in Nkhota-Kota District, Malawi”.
- Government of Malawi, Office of the President and Cabinet/National AIDS Commission, “National HIV/AIDS Policy. A Call for Renewed Action”, Lilongwe, October 2003
- HERA (Health Research for Action), “Malawi National AIDS Programme: Independent Multi-Disciplinary Review Team. Draft Report for the second Interim period January – June 2005”, mimeo, Reet, Belgium August 2005
- UNAIDS, “Financing the HIV/AIDS Response in Malawi”, Geneva, March 2004
- USAID, “The System-wide Effects of the Global Fund: Malawi Report”, final draft, July 2005

Chapter 2

- Afrobarometer (2004), “Afrobarometer Briefing Paper No. 12”. Available online: <http://www.afrobarometer.org>
- Barnett, T., and Whiteside, A. (2002), *AIDS in the Twenty-First Century: Disease and Globalization*. Palgrave Macmillan, Basingstoke, UK.
- Blackden, Mark. (2003), “Gender and Growth in Africa: Evidence and Issues”. Washington, D.C.: World Bank.
- Bollinger, L., Stover, J., and Enock Palamuleni, M. (1999), “The Economic Impact of AIDS in Malawi”. The Futures Group International, POLICY Project. Washington, D.C.
- Bota, S., Mphepo, M. A. M., Malindi, G. (2001), *The Impact of HIV/AIDS on Agricultural Extension Organisation and Field Operations in Selected Countries of sub-Saharan Africa, With Appropriate Institutional Response: Malawi*. Draft Report. UNDP, UNAIDS, FAO.
- Bryceson, D., Fonseca, J. F., Kadzandira, J. (2004), “Social Pathways from the HIV/AIDS Deadlock of Disease, Denial and Desperation in Rural Malawi”, CARE, May 2004.
- Chazan, M. (2005), *HIV/AIDS Vulnerabilities amongst Street Traders in Warwick Junction Opportunities for Local Government Intervention*. Policy Brief. Health Economics and HIV/AIDS Research Division. University of KwaZulu-Natal, Durban, South Africa.
- Chirwa, E. (2004), “Access to Land, Growth and Poverty Reduction in Malawi”. University of Malawi, Chancellors College, August 2004.
- Chiwona-Karlton, L., Kambewa, P., Yajima, M., Mahungu, N.M., Jiggins, J. (2005), “Market-Oriented Responses among Cassava Farmers in Domasi, Malawi”. *HIV/AIDS & Food and Nutrition Security: from evidence to action*. IFPRI International Conference, Durban – South Africa 14–16 April, 2005.
- Devereux, S. (1999), “Making less last longer informal safety nets in Malawi”. IDS Discussion Paper No. 373, October.
- Doctor, H. V. (2004), “Parental survival, living arrangements and school enrolment of children in Malawi in the era of HIV/AIDS”. *Journal of Social Development in Africa*, Vol. 19, No. 1 January, 2004.

- Drimie, S. (2002), "The Impact of HIV/AIDS on Rural Households and Land Issues in Southern and Eastern Africa- A Background Paper prepared for the Food and Agricultural Organization, Sub-Regional Office for Southern and Eastern Africa". Integrated Rural & Regional Development Human Sciences Research Council, Pretoria, South Africa.
- Ellis, F. (1998), "Household strategies and rural livelihood diversification". *Journal of Development Studies*, 35(1), 1–38.
- Ellis, F. (2000), "Rural livelihoods and diversity in developing countries". Oxford: Oxford University Press.
- Food and Agriculture Organization and United Nations Development Programme (2004), "African-Asian Agriculture against AIDS". Consultation on Agriculture, Development and HIV-vulnerability Reduction 11–13 December 2002, Bangkok, Thailand. UNDP; Rome: FAO, 2004.
- Frankenberger, T., Luther, K., Fox, K., and Mazzeo, J. (2003), "Livelihood Erosion Through Time: Macro and Micro Factors that Influenced Livelihood Trends in Malawi Over the Last 30 Years". Tango International and CARE.
- Gillespie, S., and Kadiyala, S., (2005), "HIV/AIDS and Food and Nutrition Security From Evidence to Action". International Food and Policy Research Institute, Food Policy Review 7 Washington, DC.
- Government of Malawi (2000), "The National Strategic Framework for HIV/AIDS (2000–2004)." Lilongwe.
- Government of Malawi (2001), "Agricultural Sector Priority Constraints, Policies and Strategies Framework for Malawi". MASIP Coordinating Unit. Lilongwe. November.
- Government of Malawi (2003), "National HIV/AIDS Policy: A call for Renewed Action", Office of the President and Cabinet, National AIDS Commission Lilongwe, Malawi.
- Government of Malawi and United Nations Development Programme (GoM/UNDP) (2002), "The Impact of HIV/AIDS on Human Resources in the Malawi Public Sector". Lilongwe, Malawi.
- IFPRI (2002), "AIDS and Food Security Essays by Peter Piot and Per Pinstrup-Andersen and by Stuart Gillespie and Lawrence Haddad 2001–2002", Reprinted from IFPRI's 2001–2002 Annual Report. International Food Policy Research Institute, Washington D. C, USA:
- ILO (2002a), "Labour Market and Employment Implications of HIV/AIDS in sub-Saharan Africa". Conceptual Framework and Methodology for ILO/Sida Study of 3 African Countries (Zambia, Tanzania and Mozambique), September 2002.
- ILO/AIDS (2002), "Zambia: The Impact of HIV/AIDS on the Labour Market", International Labour Organization, December 2002.
- Jayne, T. S., Villarreal, M. Pingali, P., Hemrich, G. (2004), "Interactions between the Agricultural Sector and the HIV/AIDS Pandemic: Implications for Agricultural Policy". Agricultural and Development Economics Division, ESA Working Paper No. 04–06.
- Food and Agriculture Organization (FAO). Electronically published at: <http://www.fao.org/es/esa>.
- Kemp, J., Aitken, J. M., LeGrand, S., Mwale, B. (2003), "Equity in health sector responses to HIV/AIDS in Malawi", Oxfam G.B./

- EQUINET: Network for Equity in Health in Southern Africa, Lilongwe, Malawi.
- Madziakapita, S. V. P. (2003), "A Situational Analysis Of the Informal Sector in the three Major Cities (Balntyre, Lilongwe & Mzuzu) Of Malawi". Submitted in accordance with the requirements for the degree of Doctor of Literature and Philosophy, University of South Africa, November, 2003.
- Martin-Staple, A. (2004) "Proposed 6-year human resource relief programme for the Malawi Health Sector", Report prepared for Health Strategies International L.L.C. Terry Sanford Institute of Public Policy and Duke Centre for International Development, Durham.
- Masanjala, W. H. (2005)," HIV/AIDS, Household Expenditure and Consumption Dynamics in Malawi". University of Malawi & Bloomsburg University of Pennsylvania.
- Mather, D., Donovan, C., Jayne, T.S., Weber, M., Mazhangara, E., Bailey, L., Yoo, K., Yamano, T. and Mghenyi, E (2004): "A Cross-Country Analysis of Household Responses to Adult Mortality in Rural Sub-Saharan Africa: Implications for HIV/AIDS Mitigation and Rural Development Policies", Michigan State University International Development Working Papers No 82, Paper prepared for the International AIDS Economics Network Pre-Conference, 9–10 July 2004, Bangkok, Thailand
- Mbaya, S. (2002),"HIV/AIDS and its Impact on land Issues in Malawi". FAO/SARPN Workshop on HIV/AIDS and Land, 24th-25th June, 2002, Shere View Lodge, Pretoria.
- Mbizule, C (2004),"Impact of the Amalinda Co-operative Housing Programme on Co-operative Members".
- Munthali, A. (2002), "Adaptive Strategies and Coping Mechanisms of Families and Communities Affected by HIV/AIDS in Malawi." UNRISD and Rhodes University, South Africa. March.
- National Health Accounts (NHA) (2002), "National Health Accounts A Broader Perspective of the Malawian Health Sector". Planning Department Ministry of Health and Population, Lilongwe, Malawi.
- National Statistics Office (1998), "Integrated Household Survey", National Statistics Office, Zomba, Malawi.
- National Statistics Office (2000), "Demographic and Health Survey", National Statistics Office, Zomba, Malawi.
- National Statistics Office (2000), "Demographic and Health Survey preliminary report", National Statistics Office, Zomba, Malawi.
- Ngalula, J., M. Urassa, et al. (2002), "Health service use and household expenditure during terminal illness due to AIDS in rural Tanzania." *Tropical Medicine & International Health* 7(10): 873–877.
- Ngwira, N., Bota, S., and Michael Loevinsohn (2001), "HIV/AIDS, Agriculture and Food Security in Malawi- Background to Action". RE-NEWAL working Paper 1, Ministry of Agriculture, Zomba, Malawi.
- Ngwira, N., Chiweza, A., Kanyongolo, N., Kayambazinthu, E. (2002), "Women's Property and Inheritance Rights in Malawi." University of Malawi- Chancellor College, Gender Studies & Outreach Unit: Draft Report.

- Ngwira, N., Kamchedzera, G., Semu, L., (2003), "Malawi Strategic Country Gender Assessment (SCGA)", Presented to the World Bank and United Nations Development Program.
- Ngwira, N., Loevinsohn, M., Mkandawire, E. (2005), "Rural Livelihoods and Resilience to Impacts of HIV/AIDS in Malawi", Institute for Policy Research and Analysis for Dialogue (IPRAD), Malawi, April 2005.
- Pelser, E., Burton, P., Gondowe, L., (2003), "Crimes of Need, Malawi National Crime Victimization Survey". National Statistical Office, Crime and Justice Statistical Division.
- Pinder, C. (2004), "Economic Pathways for Malawi's Rural Households". CARE Malawi, 2004.
- Reardon, T. (1997), "Using Evidence of Household Income Diversification to Inform Study of the Rural Non-farm Labour Market in Africa". *World Development*, Vol. 25:5 (735–748).
- Republic of Malawi (1994), "Laws of Malawi, Wills and Inheritance, Chapter 10:02".
- Republic of Malawi (2005–2009), "National Plan of Action for Orphans and Other Vulnerable Children". Malawi.
- Southern African Development Community (2003), "Towards Identifying Impacts of HIV/AIDS on Food Insecurity in Southern Africa and Implications for Response Findings from Malawi, Zambia and Zimbabwe". Food, Agriculture and Natural Resources Vulnerability Assessment Committee, 7 May 2003, Harare
- Shah, M. K., Osborne, N., Mbilizi, T., Vili, G. (2002), Impact of HIV/AIDS on Agricultural Productivity and Rural Livelihoods in the Central Region of Malawi. CARE International Malawi.
- Shah, M. S. (2003), "Safety Net Programmes and HIV/AIDS Experience from the Central Region Infrastructure Maintenance Project (CRIMP)", CARE International, Malawi.
- UNDP and FAO (2004), "Africa-Asian Agriculture against AIDS". Consultation on Agriculture, Development and HIV-vulnerability Reduction 11–13 December 2002, Bangkok, Thailand.
- White, S., Kachika, T., Chipasula, M., Hendricks, S., Gomile-Chidyaonga, F., Mitole, Z., (2004), "WLSA- Malawi Pilot Study Report Sexual Violence and Its Impact on Women's Vulnerability to HIV/AIDS and on Women's Sexual and Reproductive Health Rights in Nkhota-Kota District", Malawi.
- Wilkins, N. (1999), "HIV/AIDS and the Informal Sector", *AIDS Analysis Africa* 10 (1), June/July 1999.
- World Bank (2005), "World Development Indicators". Washington D.C., USA
- Yamano, T and Jayne, T.S. (2004): "Working-Age Adult Mortality and Primary School Attendance in Rural Kenya", Tegemeo Institute for Agricultural Development and Policy, Policy Synthesis No. 4.

Chapter 3

- Anderson, A. (2005) "AIDS – The Nemesis of Economic Development: A Long-Run CGE Analysis of the Malawian Economy" Master's Thesis, Umeå University.
- Annual Economic Report (various issues), Ministry of Economic Planning and Development (formerly *Economic Report* from National Economic Council), Lilongwe.

- Barany, M., Holding-Anyonge, C., Kayambazinthu, D., Siteo, D. (2005) Firewood, Food and Medicine: Interactions between forests, vulnerability and rural responses to HIV/AIDS, Presented at the International Conference on HIV/AIDS, Food and Nutrition Security, April 14–16, 2005 – Durban, South Africa.
- Barnett, T., and Whiteside, A. (2002): *AIDS in the Twenty-First Century: Disease and Globalization*, Palgrave Macmillan, Basingstoke, UK.
- Barro, R. J. and J.W Lee (2000) “International Data on Educational Attainment: Updates and Implications” CID Working Paper No. 42, Harvard University
- Bell, C. Shantayanan Devarajan, and Hans Gersbach (2004) Thinking About the Long-Run Economic Costs of AIDS” Chapter 3 in *The Macroeconomics of HIV/AIDS* Ed. M. Haacker, IMF, Washington, DC:
- Bigsten, A. et al., (1999), Investment in Africa’s Manufacturing Sector: A Four-Country Panel Data Analysis, *Oxford Bulletin of Economics and Statistics*, Vol. 61, No. 4.
- Bollinger, L., Stover, J., and Enock Palamuleni, M. (1999), “The Economic Impact of AIDS in Malawi”. The Futures Group International, POLICY Project. Washington, D.C.
- Bosworth, B. and S. M. Collins (2003) “The Empirics of Economic Growth: An Update” unpublished, Brookings Institution.
- Bota, S., Mphepo, M. A. M., Malindi, G. (2001), The Impact of HIV/AIDS on Agricultural Extension Organisation and Field Operations in Selected Countries of sub-Saharan Africa, With Appropriate Institutional Response: Malawi. Draft Report. United Nations Development Programme (UNDP), United Nations and The Joint United Nations Programme on HIV/AIDS (UNAIDS), Food and Agriculture Organization (FAO).
- Bryceson, Deborah Fahy, Fonseac, Judy & Kadzandira, John, (2004), “Social Pathways from the HIV/AIDS Deadlock of Disease, Denial and Desperation in Rural Malawi”, CARE, May 2004.
- Brycson, D., and Fonseca, J. (2005), “Risking Death for Survival: Peasant Responses to Hunger and HIV/AIDS in Malawi”. Paper presented at the International Conference on HIV/AIDS, Food and Nutrition Security organized by IFPRI in Durban, South Africa, 14–16 April 2005.
- Casale, M. (2005) “The Impact of HIV/AIDS on Poverty, Inequality and Economic Growth”, memo, HEARD, University of Kwazulu-Natal.
- Ching’ambo, L. et al (1995), “The Socio-Economic Impact of HIV/AIDS on Selected Sectors and Industries in Zambia”, Sida, WHO, MOH, Lusaka.
- Chirwa, E. W. (1998) “Fostering Private Food Marketing and Food Policies after Liberalization – The Case of Malawi” Chap. 3 in Ed. P. Seppälä, *Liberalized and Neglected? Food Marketing Policies in Eastern Africa*, World Development Studies 12, WIDER.
- Cockcroft, A. (2002), “Global Impact of AIDS on Work”. *Occup Environ Med* 2002; 59:280–284. Department of Public Health Sciences, London, UK.
- Collins, J. (1997), “Leveraging private sector support for HIV/AIDS prevention: opportunities and obstacles”. A report on Zimbabwe and Brazil. Washington, D.C.: Family Health International/AIDSCAP.

- Cuddington, J. and Hancock, J. (1994): "Assessing the Impact of AIDS on the Growth Path of the Malawian Economy", *Journal of Development Economics*, 43
- Cuddington, J. and Hancock, J. (1994): "The Macroeconomic Impact of AIDS in Malawi: A Dualistic Labour-Surplus Economy", *Journal of African Economies*, 4(1)
- Dorward A., Mwale, I. (2005), "Labor market and wage impacts of HIV/AIDS in rural Malawi", Imperial College, UK: Ministry of Agriculture, Malawi
- Durewall D., (2002), *Malawi: Economic Growth Public Sector Reform and Poverty*, Country Economic Report, Sida, Stockholm.
- Ellis, F., Kutengukle, M., Nyasulu, A. (2003), "Livelihoods and Rural Poverty Reduction in Malawi". *World Development* Vol. 31, No. 9, pp. 1495–1510. Great Britain.
- ESCOM (2003), "HIV/AIDS Policy". Electricity Supply Corporation of Malawi (ESCOM) Ltd., Blantyre.
- Fisher, M., Shively, G.E., Buccola, S., (2005), *Activity Choice, Labor Allocation, and Forest Use in Malawi*, Forthcoming in *Land Economics*.
- Food and Agriculture Organization of the United Nations (2005), "Emergency Recovery and Rehabilitation Interventions Concept Note-April 2005". Food and Agriculture Organization of the United Nations (FAO).
- Frankenberger, T., Luther, K., Fox, K., and Mazzeo, J. (2003), "Livelihood Erosion Through Time: Macro and Micro Factors that Influenced Livelihood Trends in Malawi Over the Last 30 Years". Tango International and CARE.
- Garbus (2003) *HIV/AIDS in Malawi*, Country AIDS Policy Analysis Project, AIDS Policy Research Center, University of California San Francisco.
- Gillespie, S. (1988), "The Potential Impact of AIDS on Food Production Systems in Central Africa". Food and Agriculture Organization of the United Nations (FAO).
- Gillespie, S., and Kadiyala, S., (2005), "HIV/AIDS and Food and Nutrition Security From Evidence to Action". International Food and Policy Research Institute, *Food Policy Review* 7 Washington, DC.
- Gladwin, C.H., Anne M. Thomson, A. M., Peterson, J. S., Anderson, A. S. (2001), "Addressing food security in Africa via multiple livelihood strategies of women farmers". *Food Policy* 26, pp. 177–207. Available online: <http://www.elsevier.com/locate/foodpol>
- Global Insight, (2005) *Country Report-Malawi*, World Market Research Centre,
- Government of Malawi (2000) "Malawi Interim Poverty Reduction and Growth Strategy Paper" Malawi Government, Office of the President and Cabinet,
- Lilongwe.
- Government of Malawi (2002), "Malawi Poverty Reduction Strategy Paper", Lilongwe, Malawi.
- Government of Malawi (2005), *Poverty Reduction Strategy Paper Annual Progress Report for Malawi*.
- Malawi Government and World Bank (2000) "Malawi: Public Expenditure Review (Draft Report)", Lilongwe.

- Malawi Government and United Nation Development Program (GoM/ UNDP), 2002, the impact of HIV/AIDS on Human Resources in the Malawi Public Sector.
- Greener, R. (1997), "Impact of HIV/AIDS and Options for Intervention: Results of a Five Company Pilot Study Paper Written for the Botswana National Task Force on AIDS at the Workplace". BIDPA Working Paper #10. August, 1997.
- Haacker, M. (2004): "HIV/AIDS: The Impact on the Social Fabric and the Economy", Chapter 2 in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker (Washington DC: International Monetary Fund)
- Hammar skjöld, M. (2003), *The Environment, Natural Resources and HIV/AIDS*, Sida, Stockholm.
- Hemrich, G., and Schneider, B. (1997), HIV/AIDS as a cross-sectoral issue for Technical Cooperation Focus on agriculture and rural development. Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. Health, Population and Nutrition Division, Darmstadt, Germany.
- International Labour Organisation (ILO) (2004): *HIV/AIDS and Work: Global Estimates, Impact and Response*, ILO Programme on HIV/AIDS and the World of Work (Geneva: International Labour Office)
- IMF (2001) "Malawi: Selected Issues and Statistical Appendix, IMF Country Report No. 01/32", Washington.
- IIMF (2005) "Malawi: Request for Three-Year Arrangement under the Poverty Reduction and Growth Facility" Country Report No. 05/285, Washington DC.
- IMF and World Bank (2000) "Malawi: Decision Point Document for the Enhanced Heavily Indebted Poor Countries Initiative", Washington.
- Isaksen, J., Songstad, G.N, Spissoy, A. (2002), "Socio-economic effects of HIV/AIDS in African countries", NORAD
- Jones, C. (1996), "The Microeconomic Implications of HIV/AIDS". A dissertation submitted to the School of Development Studies of the University of East Anglia in part-fulfilment of the requirements for the Degree of Master of Arts, September 1996.
- Jones, C. (1996b), "Brown and Clapperton Limited: The Cost Implications of HIV/AIDS", JSI-STAFF Project, Lilongwe, Malawi.
- Kalemli-Ozcan (2005) "AIDS and Economic Development: Evidence of the Reversal of the Fertility Transition" Unpublished paper, University of Houston.
- Klasen, S. (1999) *Does Gender Inequality Reduce Growth and Development? Evidence From Cross-Country Regressions*, The World Bank, Policy and Research Report on Gender and Development, Working paper series No. 7.
- Lorentzen, P., J. McMillan and R. Wacziarg (2005) "Death and Development" NBER Working Paper 11620, Cambridge, MA.
- Madziakapura, S. V. P. (2003), "A Situational Analysis Of the Informal Sector in the three Major Cities (Balntyre, Lilongwe & Mzuzu) Of Malawi". Submitted in accordance with the requirements for the degree of Doctor of Literature and Philosophy, University of South Africa, November, 2003.
- Mangani, R. (2004) "Saving and Investment in Malawi" Study submitted to Ministry of Economic Planning and Development, Chancellor College, University of Malawi.

- Mather, D., Donovan, C., Jayne, T.S., Weber, M., Mazhangara, E., Bailey, L., Yoo, K., Yamano, T. and Mghenyi, E (2004): "A Cross-Country Analysis of Household Responses to Adult Mortality in Rural Sub-Saharan Africa: Implications for HIV/AIDS Mitigation and Rural Development Policies", Michigan State University International Development Working Papers No 82, Paper prepared for the International AIDS Economics Network Pre-Conference, 9–10 July 2004, Bangkok, Thailand.
- McPherson, M.F. (2003): "Macroeconomic Models of the Impact of HIV/AIDS". Cambridge: Centre for Business and Government, John F. Kennedy School of Government, Harvard University
- Ministry of Agriculture and Food Security (2003), "HIV/AIDS in the Agriculture Sector Policy and Strategy 2003–2008".
- Ministry of Agriculture (2005), "Road Map on Agriculture Development in Malawi". Ministry of Agriculture, Lilongwe.
- Ministry of Education (various issues) *School Census*, Government of Malawi, Lilongwe.
- Ministry of Mines Natural Resources and Environment (2002) *State of Environment Report for Malawi 2002*, Environmental Affairs Department, Government of Malawi, Lilongwe.
- Mtika, M (2003): "Family Transfers in a Subsistence Economy and under a high Incidence of HIV/AIDS: The Case of Rural Malawi", *Journal of Contemporary African Studies*, 21, 1, 2003
- National Aids Commission (NAC) (2003) "HIV Sentinel Surveillance Report 2003" Government of Malawi, Ministry of Health and Population, Lilongwe.
- National Aids Commission (NAC) (2004) "HIV/AIDS in Malawi: 2003 Estimates and Implications" Government of Malawi, Ministry of Health and Population, Lilongwe.
- National Economic Council (2001). "Qualitative Impact Monitoring Round 2 (QUIM-2) (Policy Analysis). Second Draft. Lilongwe, Malawi.
- National Statistics Office (1998), "Integrated Household Survey 1998", Republic of Malawi, National Statistics Office, Zomba, Malawi.
- National Statistics Office (2000) "Malawi Demographic and Health Survey 2000, Preliminary Report, MEASURE DHS+ ORC Macro", National Statistical Office, Zomba.
- National Statistical Office (NSO) and ORC Macro (2001) "Malawi Demographic and Health Survey 2000", Zomba, Malawi.
- National Statistical Office (2005), "Statistical Yearbook 2004", National Statistics Office, Zomba, Malawi.
- Nattrass, N.(2002): "Aids, Growth and Distribution in South Africa", Centre for Social Science Research, Aids and Society Research Unit, CSSR Working Paper No. 7
- Nehru, V., and A. Dhareshwar (1993) "A New Database on Physical Capital Stock: Sources, Methodology and Results." *Revista de Analisis Economico*, 8(1).
- Ngwira, N., Bota, S., Loevinsohn, M. (2001), "HIV/AIDS, Agriculture and Food Security in Malawi- Background to Action". RENEWAL working Paper 1, Ministry of Agriculture, Zomba, Malawi.
- Ngwira, Naomi, Asiyati Chiweza, Ngeyi Kanyongolo & Edrinnie Kayambazinthu, (2002), "Women's Property and Inheritance Rights

- in Malawi”. University of Malawi- Chancellor College, Gender Studies & Outreach Unit: Draft Report.
- Ngwira, N. and Mkandawire, E., (2003), “Cost of gender disparities in access to socio-economic services in Malawi”, Research Report # 0302, Institute for Policy Research and Analysis for Dialogue (IF-PRAD).
- Ngwira, N., Kamchedzera, G., and Semu, L., (2003), “Malawi Strategic Country Gender Assessment (SCGA)”, Presented to the World Bank and United Nations Development Program.
- Nyanjagha Botha, Blessings, (2003) “Looking for a Path Out of Poverty: The study of Chimaliro Forestry Reserve, Malawi”, Masters Thesis in Development and Resource Economics, Agricultural University of Norway
- Nwanyanwu, O. C., Kumwenda, N., Kazembe, P. N., Jemu, S., Ziba, C., Nkhoma, W. C., Redd, S. C. (1997), “Malaria and human immunodeficiency virus infection among male employees of a sugar estate in Malawi”, *Transactions of the Royal Society of Tropical Medicine and Hygiene* (1997) 91, 567–569.
- Parry, S. (2000), “AIDS Brief-Commercial Agriculture Sector”, Health Economics and HIV/AIDS Research Division, University of Natal, Durban, South Africa.
- Pinder, C. (2004), “Economic Pathways for Malawi’s Rural Households”. CARE Malawi, 2004.
- Prior, F. L. (1990) *The Political Economy of Poverty, Equity and Growth*, Oxford University Press.
- Republic of Malawi, “HIV/AIDS in the Agricultural Sector: Policy and Strategy, 2003–2008”.
- Reserve Bank of Malawi (2005) *Financial and Economic Review*, vol. 37, no. 1, Lilongwe.
- Rosen, S., Simon, J., Thea, D. M., Vincent, J. R. (2000), “Care and Treatment to Extend the Working Lives of HIV-Positive Employees: Calculating the Benefits to Business”. *South African Journal of Science*. Harvard Institute for International Development, Cambridge, MA, USA.
- Rosen, S., and Simon, J. (2002), “Shifting the Burden of HIV/AIDS”. Centre for International Health, Boston University School of Public Health, Boston, MA, USA.
- Shah, M. K., Osborne, N., Mbilizi, T., Vilili, G. (2002), “Impact of HIV/AIDS on Agricultural Productivity and Rural Livelihoods in the Central Region of Malawi”. CARE International Malawi.
- Simon-Meyer, J., (2002), “AIDS Brief for Sectoral Planners and Managers. Fisheries Industry”. Published by: Health Economics and HIV/AIDS Research Division, University of Natal. Durban, South Africa.
- Smith, J., and A. Whiteside (1995), “The socio-economic impact of HIV/AIDS on Zambian Businesses.” Report for the BEAD Group and the Commonwealth Development Corporation.
- Simon, J., Rosen, S., Whiteside, A., Vincent, J. R., and Thea, D. (2000), “The Response of African Businesses to HIV/AIDS”. Kensington Publications, London.
- Southern African Development Community (SADC) (2003), “Towards Identifying Impacts of HIV/AIDS on Food Insecurity in Southern Africa and Implications for Response Findings from Malawi, Zambia

- and Zimbabwe.” Food, Agriculture and Natural Resources Vulnerability Assessment Committee (VAC), 7 May 2003, Harare.
- UN (2004), “The Impact of AIDS”, Economic and Social Affairs, Population Division, New York, USA.
- UN Population Division (2005) World Population Prospects: The 2004 Revision Population Database, New York.
- UNDP (2005), Human Development Report, USA: New York.
- White, S., Kachika, T., Chipasula, M., Hendricks, S., Gomile-Chidyaonga, F., Mitole, Z., (2004), “WLSA- Malawi Pilot Study Report Sexual Violence and Its Impact on Women’s Vulnerability to HIV/AIDS and on Women’s Sexual and Reproductive Health Rights in Nkhota-Kota District”, Malawi.
- Whiteside, A., O’Grady, M. (2002), “AIDS and the Private Sector: Lessons from Southern Africa”. In Sida studies no. 7. One Step Further – Responses to HIV/AIDS. editor Anne Sisak, Stockholm (pp.116–137).
- Whitworth, A. (2004), “Malawi’s Fiscal Crisis: A Donor Perspective,” memo, DFID, Lilongwe, Malawi.
- World Bank (1997) “Accelerating Malawi’s Growth: Long-term Prospects and Transitional Problems”, unpublished, Washington.
- World Bank (2004) World Bank Africa Database 2004, Washington DC.
- World Bank (2005) World Development Indicators 2005, Washington DC.
- Young, A. (2005) The Gift of Dying: The Tragedy of AIDS and the Welfare of Future African Generations” *Quarterly Journal of Economics*, vol. 120, no. 2, may pp. 423–466.

Chapter 4

- Ainsworth, M. and Filmer, D. (2002) “Poverty, AIDS and Children’s Schooling: A Targeting Dilemma”, The World Bank Development Research Group and Human Development Network Education and Social Protection Teams, Policy Research Working Paper 2885, Washington, U.S.A.
- Badcock-Walters, P., Whiteside, A. (2000) “HIV/AIDS and Development in the Education Sector” Health Economics & HIV/AIDS Research Division (HEARD), University of KwaZulu-Natal, Durban, South Africa.
- Badcock-Walters, P. (2005), Lecture given at the workshop: Planning for HIV/AIDS in sub-Saharan Africa, 11–29 July 2005, HEARD, University of KwaZulu-Natal, Durban, South Africa.
- Barnett, T., and Whiteside, A. (2002) *AIDS in the Twenty-First Century: Disease and Globalization*. Palgrave Macmillan, Basingstoke, UK.
- Birdssall, N. and Hamoudi, A. (2004) “AIDS and the Accumulation and Utilization of Human Capital in Africa”, Chapter 4 in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker (Washington DC: International Monetary Fund).
- Chawani, B.S. and Kadzamira, E.C. (2004), “The impact of HIV/AIDS on the education sector in Malawi: Study 2 Examining the impact of HIV/AIDS on Governance in the education sector”, Ministry of Education Science and Technology (MoEST)/ IIEP- UNESCO, Lilongwe, Malawi.
- Conticini, A. (2004) “Macroeconomics and Health in Malawi: What way forward”, World Health Organization, Geneva, Switzerland.

- Das J., Dercon, S., Habyarimana, J., Krishnan, P., “Teacher Shocks and Student Learning: Evidence from Zambia”, The Policy Research Working Paper Series World Bank, available online: <http://econ.worldbank.org>
- Department of Human Resource Management and Development (DHRMD) and United Nations Development Programme (UNDP) (2003) “Report on the identification of critical areas for capacity replenishment in the public service”, Lilongwe, Malawi.
- Department for International Development (DFID)-Malawi (2005) “Human Resources for Health Case Study-Malawi”, DFID-Malawi Lilongwe, Malawi.
- Doctor, H.V. (2004), “Parental survival, living arrangements and school enrolment of children in Malawi in the era of HIV/AIDS”, *Journal of Social Development in Africa*, Vol 19, No 1 Jan 2004.
- Durevall, D. and M. Erlandsson (2004) “Public Finance Management Reform in Malawi” Country Economic Report 2005:1, Sida, Stockholm
- Economic Report 2005 (2005) Ministry of Economic Planning and Development, Lilongwe.
- Floyed, K. and Gilks, C.F. (1996), “Impact of, and Response to, the HIV Epidemic at Kenyatta National Hospital, Nairobi,” Report 1, April (Liverpool, United Kingdom: Liverpool School of Tropical Medicine). Cited in Over, M. (2004) “Impact of the HIV/AIDS epidemic on the health sector in Developing countries”, Chapter 10 in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker (Washington DC: International Monetary Fund)
- Government of Malawi and United Nations Development Programme (GoM/UNDP) (2002) “The Impact of HIV/AIDS on Human Resources in the Malawi Public Sector”, Lilongwe, Malawi.
- Government of Malawi (2002), “Malawi Poverty Reduction Strategy Paper”, Lilongwe, Malawi.
- Government of Malawi (2003), “National HIV/AIDS Policy: A call for Renewed Action”, Office of the President and Cabinet, National AIDS Commission Lilongwe, Malawi.
- Government of Malawi (2005a) “Malawi Poverty Reduction Strategy: 2003/2004 Annual Progress Report” Government of Malawi, Ministry of Economic Planning and Development, Lilongwe
- Government of Malawi (2005b) “Budget Document Nr. 4” Ministry of Finance, Lilongwe
- Grassly, N.C., Desai, K., Pegurri E., Sikaze, A., Malambo, I., Siamatowe, C., Bundy, D. (2003), “The Economic impact of HIV/AIDS on the education sector in Zambia”, In Press-AIDS 2003, Lippincott Williams & Wilkins.
- Haacker, M. (2004a) “HIV/AIDS: The Impact on the Social Fabric and the Economy”, Chapter 2 in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker (Washington DC: International Monetary Fund)
- Haacker, M. (2004b) “The Impact on Government Finance and Public Services” Chap. 7 in the *Macroeconomics of AIDS*, Ed. Markus Haacker (Washington DC: International Monetary Fund)
- Haddad, L. and Zeller, M. (1996) “How can safety nets do more with less? General issues with some evidence from Southern Africa”, Food Consumption and Nutrition Division, Discussion Paper no. 16, International Food Policy Research Institute, Washington, U.S.A.

- Hansen, K., Chapman, G., Chitsike, I., Kasilo, O. and Gabriel Mwaluko, G. (2000) "The costs of HIV/AIDS care at government hospitals in Zimbabwe", *Health Policy and Planning*; 15(4): 432–440.
- Harries, A.M. and Schubert, J.G. (2001) "Defining 'Quality in the Midst of HIV/AIDS: Ripple Effects in the classroom. IEQ Project. Paper presented at the 44th annual meeting of the Comparative Education Society, March, Washington, U.S.A. (cited in World Bank 2002)
- Hornby, P., Ozcan, S. (2003), "Human Resources for Health Sector Strategic Plan 2003 to 2013" (Draft), Lilongwe, Malawi.
- IMF (2001) "Malawi: Selected Issues and Statistical Appendix, IMF Country Report No. 01/32", Washington.
- IMF (2004) "Malawi: Selected Issues and Statistical Appendix" SM/04/356, Washington DC.
- IMF (2005) "Malawi: Request for Three-Year Arrangement under the Poverty Reduction and Growth Facility" Country Report No. 05/285, Washington DC.
- IMF and World Bank (2005), Malawi: Poverty Reduction Strategy. Annual Progress Report-Joint Staff Advisory Note, Washington, U.S.A.
- Institute for Security Studies (ISS) and the Malawi Institute of Management (MIM) (2003), "HIV/AIDS and attrition: Assessing the impact on the safety, security and access to justice sector in Malawi and developing appropriate mitigation strategies", Lilongwe, Malawi.
- Kadzamira E.C, Maluwa-Banda, D., Kamlonger, A., Swainson, N. (2001), "The Impact of HIV/AIDS on Primary and Secondary schooling in Malawi: Developing a comprehensive strategic response", Centre for Educational Research and Training (CERT).
- Kakwani, N., and Subbarao, K. (2005), "Aging and Poverty in Africa and the Role of Social Pensions", Social Protection Discussion Paper Series No. 0251, Human Development Network, Washington DC: The World Bank.
- Kaler, A. (2004), "AIDS-talk in everyday life: the presence of HIV/AIDS in men's informal conversations in Southern Malawi", *Social Science & Medicine* 59 (2004) 285–297.
- Kelly, M.J. (2000) "The Encounter Between HIV/AIDS and Education", UNESCO Sub-Regional Office for Southern Africa, Harare, Zimbabwe.
- Kelly, M.J. (2001) "Challenging the Challenger: Understanding and Expanding the Response of Universities in Africa to HIV/AIDS", Association for the Development of Education in Africa (ADEA), Washington, U.S.A.
- Kemp, J., Aitken, J. M., LeGrand, S., Mwale, B.(2003), "Equity in health sector responses to HIV/AIDS in Malawi", Oxfam G.B./EQUINET: Network for Equity in Health in Southern Africa, Lilongwe, Malawi.
- Lewis, D.K, Callaghan, M., Phiri, K., Chipwete, J., Kublin, J.G., Borgstein, E., Zijlstra, E.E. (2003) "Prevalence and indicators of HIV and AIDS among adults admitted to medical and surgical wards in Blantyre, Malawi", *Transactions of the Royal Society of Tropical Medicine and Hygiene* (2003) 97, 91–96.
- Makuti, M., Gonani, A., Macheso, A., Simwaka, B., (2004), "Challenges Facing the Malawian Health Workforce in the Era of HIV/AIDS", Commonwealth Regional Health Community Secretariat (CRHCS), U.S. Agency for International Development, Bureau for Africa

- (USAID/AFR), Support for Analysis and Research in Africa (SARA) Project, CRHCR, Arusha, Tanzania.
- Makwiza, I., Nyirenda, L., Bongololo, G., Loewenson, R., Theobald, S., (2005), "Monitoring equity and health systems in the provision of Anti-retroviral Therapy (ART): Malawi Country report", The Research Trust/ EQUINET: Regional Network for Equity in Southern Africa, Equinet Discussion Paper no. 24, Lilongwe, Malawi.
- Malawi Economic Justice Network (MEJN) (2005), "Analysis of the 2005/2006 Health Sector Budget", Lilongwe, Malawi.
- Mangani, R. (2004) "Saving and Investment in Malawi" Report for Government of Malawi, Chancellor College, University of Malawi.
- Martin-Staple, A. (2004) "Proposed 6-year human resource relief programme for the Malawi Health Sector", Report prepared for Health Strategies International L.L.C. Terry Sanford Institute of Public Policy and Duke Centre for International Development, Durham.
- Ministry of Health (2001) "National Health Account, 2001", Lilongwe, Malawi.
- Ministry of Health (2005) Statistical Data provided by MoH officials.
- Mundy C.J.F, Bates, I, Nkhorna, W., Floyed, K. Kadeweile, G., Ngwira, M., Khuwi, A., Squire, S.B., Gilks, F. (2003), "The operation, quality and costs of a district hospital laboratory service in Malawi", *Transactions of the Royal Society of Tropical Medicine and Hygiene* (2003) 97, 403–408.
- National Aids Commission (NAC) (2004) "HIV/AIDS in Malawi: 2003 Estimates and Implications" Government of Malawi, Ministry of Health and Population, Lilongwe.
- National AIDS Commission (2005), "Position Paper on equity in access to Antiretroviral Therapy (ART) in Malawi, National AIDS Commission, Lilongwe, Malawi.
- National Statistical Office (NSO) and ORC Macro (2001) "Malawi Demographic and Health Survey 2000", Zomba, Malawi.
- National Statistical Office (NSO) and ORC Macro (2003) "Ed Data (DHS) Survey -2002, Education Data for Decision-making", Zomba, Malawi.
- National Statistical Office (2004) Statistical Yearbook, available online: <http://www.nso.malawi.net> [2005–08–31].
- Over, M (2004) "Impact of the HIV/AIDS Epidemic on the Health Sectors of Developing Countries", Chapter 10 in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker (Washington DC: International Monetary Fund).
- Pelser, E., Burton, P., Gondowe, L., (2003) Crimes of Need, Malawi National Crime Victimization Survey, National Statistical Office, Crime and Justice Statistical Division.
- Plamondon, P., Cichon, M., Annycke, P. (2004) "Financial Effects of HIV/AIDS on National Social Protection Schemes", Chapter 8 in *The Macroeconomics of HIV/AIDS*, edited by Markus Haacker (Washington DC: International Monetary Fund)
- Shah (2003), "What is dead does not fear decay?: Impact of HIV/AIDS on Primary Education in Lilongwe and Zomba Districts, Malawi", Care International, Lilongwe, Malawi.
- Skov Ostergaard, L (2003), "A study identifying factors affecting retention of midwives in Malawi", Dissertation submitted to the University

of Liverpool, Liverpool School of Tropical Medicine, International Health Division,

UNAIDS (2005), available online. www.unaids.com [2005–08–31]

World Bank (2003) “Malawi Country Financial Accountability Assessment,” Report No. 26765–MAI, Washington DC.

World Bank (2004) “Cost, Financing and School Effectiveness of Education in Malawi: A future of limited choices and endless opportunities”, African Region Human Development Working Paper Series, Washington, U.S.A.

World Health Organisation (2004) “World Health Report 2004– changing history”, Geneva, Switzerland.

World Health Organisation (2005a), “World Health Report 2005: make every mother and child count”, Geneva, Switzerland.

World Health Organisation (2005b), “Global Atlas of the Health Workforce” available online: <http://www.who.int/globalatlas/default.asp> [2005–08–31].

3) Annual Economic Report 2005

7) NOS and OCR Macro (2001) and (2003)

Chapter 5

Arndt, Channing, “HIV/AIDS, Human Capital and Economic Prospects for Mozambique”, Trade and Macroeconomic Division, International Food Policy Research Institute (IFPRI), TMD Discussion Paper no. 88, Washington D.C., 2002

Bell, D., Devarjan, S., and Gersbach, H., “The Long-run Economic Costs of AIDS: Theory and Application to South Africa”, The World Bank, Washington D.C. 2003

Bignami-Van Assche, Simona, Chao, Li-Wei & Anglewicz, Philip, “The validity of self-reported HIV infection among the general population in rural Malawi”, Harvard University & University of Pennsylvania, mimeo, 2005

BRIDGE, “Exploring Community Beliefs, Attitudes & Behaviours Related to HIV/AIDS”, Baseline Research from Eight BRIDGE Districts in Malawi, Lilongwe, September 2004

Bryceson, Deborah Fahy, Fonseac, Judy & Kadzandira, John, “Social Pathways from the HIV/AIDS Deadlock of Disease, Denial and Desperation in Rural Malawi”, CARE, May 2004

deGraft-Johnson, Paz-Soldan Valerie, Kasote, Antonio & Tsui, Amy, “HIV Voluntary Counseling and Testing Service Preferences in a Rural Malawi Population”, mimeo, n.d

Egerö, Bertil, “To Fight AIDS Successfully Requires Unconventional Approaches”, in “One Step Further – Responses to HIV/AIDS”, *Sida Studies* no. 7, Stockholm 2002

Government of Malawi, “Malawi Poverty Reduction Strategy Paper”, Lilongwe 2002

Kalemli-Ozcan, Sebnem, “AIDS, Reversal of the Demographic Transition and Economic Development: Evidence from Africa”, University of Houston and National Bureau of Economic Research (NBER), May 2005

Kaler, Amy, “The Moral Lens of Population Control: Condoms and Controversies in Southern Malawi”, *Studies in Family Planning*, Vol. 35, No. 2, June 2004 (2004 a)

- Kaler, Amy, "AIDS-talk in everyday life: the presence of HIV/AIDS in men's informal conversation in Southern Malawi", *Social Science & Medicine* no. 59, 2004 (2004 b)
- Munthali, Alister, Chimbiri, Agnes & Zulu, Eliya, "Adolescent Sexual and Reproductive Health in Malawi: A Synthesis of Research Evidence", The Alan Guttmacher Institute, New York and Washington, December 2004
- Ngwira, Naomi, Loevinsohn, Michael & Mkandawire, Esnat, "Rural Livelihoods and Resilience to Impacts of HIV/AIDS in Malawi", Institute for Policy Research and Analysis for Dialogue (IPRAD), Malawi, April 2004
- Pelser, Eric, Burton, Patrik & Lameck Gondwe, "Crimes of Need. Results of the Malawi National Crime Victimization Survey", Crime & Justice Statistical Division, National Statistical Office, Lilongwe 2004
- Smith, Kirsten & Watkins, Susan Cotts, "Perceptions of risk and strategies for prevention: responses to HIV/AIDS in Malawi", *Social Science & Medicine* no. 60 (2005)
- Tawfik, L., "Chatting about AIDS in Malawi: Diffusion of AIDS information and high-risk sexual behaviour", mimeo, Johns Hopkins University, mimeo 2002
- World Bank, "Confronting AIDS. Public Priorities in a Global Epidemic", World Bank/Oxford University Press, Oxford & Washington 1997

Chapter 6

- Government of Malawi, Office of the President and Cabinet/National AIDS Commission, "National HIV/AIDS Policy. A Call for Renewed Action", Lilongwe, October 2003
- HERA (Health Research for Action), "Malawi National AIDS Programme: Independent Multi-Disciplinary Review Team. Draft Report for the second Interim period January – June 2005", mimeo, Reet, Belgium August 2005
- UNAIDS, "Financing the HIV/AIDS Response in Malawi", Geneva, March 2004
- USAID, "The System-wide Effects of the Global Fund: Malawi Report", final draft, July 2005

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