The Impact of HIV/AIDS on Human Resources in the Malawi Public Sector

Report

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Table of Contents

List of Tables

List of Graphs

List of Boxes

FOREWORD

The HIV/AIDS epidemic is a major challenge to public health and socio-economic development of Malawi. Presently, it is the greatest threat to human development in the country and a major contributor to poor performance in various sectors. It continues to bring great suffering to the people of Malawi in terms of its physical, psychological and emotional devastation. The spread of this disease is so pervasive that it threatens the most productive groups in our society. In 2001, it was estimated that the infection rate for the population group of 15-49 is 16%. The implications for the planning and management of our national development programme are immediately obvious. That is why I welcome this study, which is the first initiative to take a wide look at the impact of HIV/AIDS on the Public Service.

In Malawi, the Public Service is a critical part of the executive arm of government. It plays a central role in governance and in the planning and management of economic and social development. Although the private sector is the acknowledged engine for economic growth, the efficiency and effectiveness of the Public Service is critical for enhanced productivity. Poor performance of the Public Service has a direct adverse effect on national development efforts.

In July 2001, the Government, in collaboration with UNDP and UNAIDS, commissioned the Malawi Institute of Management to undertake an HIV/AIDS impact assessment study in the Public Service, covering the Ministries of Health, Education, Agriculture and Water Development, as well as the Malawi Police Service. The exercise was conducted in a consultative manner, with the involvement of all key stakeholders. This report presents the findings of the study, which covers the period 1990-2000. The report reveals that HIV/AIDS is the major cause of deaths in the public service. It goes on to recommend the introduction of HIV/AIDS prevention and mitigation measures in the Public Service for a sustained reduction in the incidence of the disease not only in the sectors studied but across the entire public sector. A similar impact assessment on the broader rural sector was carried out by the Ministry of Agriculture with support from the Food and Agricultural Organization and financing from the United Nations Development Programme.

Until this study, there has been no assessment of the impact of the HIV/AIDS epidemic on the public service to enable government adopt feasible and sustainable interventions, and also formulate sound human development policies and succession plans for further strengthening of the public service. The national response to the impact of HIV/AIDS calls for co-operation of all Malawians if the HIV/AIDS epidemic is to be reduced. For the Public Service, capacity-building initiatives will play a major role in mitigating the impact of the epidemic. The Government will be coming up with various measures to address the recommendations of the report.

Today, Malawi is facing grave threats to its hopes of attaining full and sustainable development as described in our Vision 2020 document. One such challenge is HIV/AIDS which has placed a virtual stranglehold on our present and is well on the way to compromising our future. However, the Government and people have decided to confront this problem and together we will defeat this enemy of development.

In conclusion, I wish to express the Government of Malawi's 's appreciation to UNDP and UNAIDS for funding this important study and to all other partners for their input into the report.

DR BAKILI MULUZI

PRESIDENT OF THE REPUBLIC OF MALAWI

AND MINISTER RESPONSIBLE FOR THE PUBLIC SERVICE

Preface from the UNDP Resident Representative

The first HIV/AIDS case in Malawi was diagnosed in 1985. Since then, the incidence rate has exploded, as the disease spread, touching the lives of citizens across the country. The profile of the spread of this disease is no different in Malawi than in other countries where the productive age groups are most at risk and increasingly large groups of orphans are created, accompanied by the growing phenomena of child and grand-parent headed households.

In the Southern Africa sub-region, Malawi is among the most highly infected countries, with a 16% adult infection rate in the 16-49 age group. Botswana remains the highest at 38.8%. At a time when the Malawi people have developed a consensus on the future, as enshrined in its Vision 2020 document, when the Government has committed itself to realizing the global Millennium Development Goals, and has approved a first Poverty Reduction Strategy to manage actions towards the achievement of national development goals, the HIV/AIDS epidemic, now at crisis level in the country, represents the most serious threat towards reaching the dream of halving poverty in Malawi by the year 2015.

This impact assessment of the effects of HIV/AIDS on the Malawian Public Sector marks the first time that such a representative attempt has been made to examine the consequences on a key category in the adult population, namely the Public Service. At the request of Government, UNDP agreed to provide the financing for this important study in response to the challenges that HIV/AIDS poses on human capital development, supply and productivity. The study provides a comprehensive assessment over the period 1990-2000 of the Ministries of Education, Health and Population, and Agriculture and Irrigation. It also looks at the Malawi Police Service. The methodology applied to this study allowed for the generation of qualitative and quantitative data, aimed at better decision-making. It entailed the recruitment of a multi-speciality team led by the Malawi Institute of Management. Broad literature review which covered many of the studies and assessments made in the area of HIV/AIDS locally and elsewhere; field surveys during which individual interviews were conducted and questionnaires applied, as well as focus group discussions were also held. In the end, both primary and secondary data were collected which formed the basis for the findings and recommendations contained in the study. UNDP wishes to acknowledge the strong commitment which the research and writing team from MIM brought to this assignment which, allied to the participatory manner in which all individuals, institutions, ministries responded, plus the inputs from the broad coalition of partners in the fight against HIV/AIDS, contributed to the wealth of data and information that all of us should find helpful in the shaping of our ongoing and future cooperation in this area.

For UNDP, joining with the Government of Malawi to conduct this 10-year study was a further testimony to our partnership in the fight against HIV/AIDS. It also reflects UNDP's commitment at the global level, as HI/VAIDS is one of the six corporate practice areas where our resources will be concentrated. In order to arrest the further spread of HIV, UNDP will focus on assisting Governments to develop national HIV/AIDS strategies that mobilise social and political action across all sectors of society. In Malawi, UNDP has assisted Government develop the National HIV/AIDS Strategic Framework for 2000 – 2004, and the preparation and management of the 2000 HIV/AIDS Resource Mobilisation Round Table. In addition to the development of technical and managerial capacity at the umbrella body, the National Aids Commission and its predecessor, the National Aids Secretariat, UNDP has worked with NGOs, Civil Society Organizations and donor partners to advance the goals of the National Strategy to Combat HIV/AIDS.

It is our fervent wish that the issues raised in this Impact Assessment of HIV/AIDS on the Public Service will lead to early and significant decision making on the policies and remedial measures that need to be introduced if we are to see a reversal of the trends so amply highlighted in the Study. The findings are very revealing. For instance, death, resulting from HIV/AIDS-related illnesses, is confirmed as the main cause of attrition in the Public Service. High morbidity and mortality rates, due to HIV/AIDS, result in low productivity. In addition, Government spends huge sums of money caring for, and supporting, infected and affected Public Service staff and their dependants. It is now imperative to put in place human resource policies and capacity development plans that would resuscitate the skills base in the Public Service, which has been acknowledged within the MPRSP as constituting the core competencies of the nation for formulating, implementing and monitoring national, sectoral and district/community level policies and actions for poverty reduction.

The United Nations Development Programme is committed to supporting the implementation of the recommendations outlined in the Impact Assessment study.

Zahra Nuru
Resident Representative, UNDP

Acknowledgements

The HIV/AIDS epidemic is having deleterious effects on the delivery of public services in Malawi. In order to assess the magnitude of the HIV/AIDS problem in the public service, the Malawi Government undertook an HIV/AIDS Impact assessment study with financial and technical support from UNDP and UNAIDS. Ms. Zahra Nuru, the UNDP Resident Representative, provided useful insights and guidance to the study.

The Malawi Government commends the Malawi Institute of Management, who conducted the study, for the good work that they have done. In particular, the Government would like to thank the Executive Director of MIM, Dr. Benson F. Kandoole, for accepting to undertake this challenging task. Special thanks go to Mr. Precious. B. Givah, Team Leader; Ms. Janet J. Kathyola, Technical Team Leader; Mr. Nelson Kalanje, Team Member; Mr. Soyapi Lungu, Team Member; Mr. Franklin Yonamu, Team Member; and Dr. Snowden Hiwa, Medical Doctor. Government would also like to extend its appreciation to Ms. Mary Chinery –Hesse, who provided technical advice to the consulting team and raised awareness among the donor community in Malawi on the study; and Ms. Mirjam van Donk, who edited the document.

The special role played by the Steering Committee in managing the entire study process is hereby acknowledged. The National AIDS Commission also made useful comments on the initial draft report. Government would also like to extend its appreciation to Mr. Fred Mwathengere of UNDP and Mr. Binwell F. Banda of DHRMD for providing technical back-up support to the study team. Dr. Roland Msiska of the UNDP Regional Project on HIV and Development in Pretoria also provided guidance on how to 'collapse' the draft report into a manageable and readable report. The work done by numerous other collaborators as well as all those who, in one way or another, provided the required data/information is also gratefully acknowledged.

To all of you and others whom we have not mentioned we extend our heart-felt gratitude and hope that you will provide similar support to any future studies as we attempt to understand the epidemic.

Abbreviations

ADD	-	Agricultural Development Division
AIDS	-	Acquired Immune Deficiency Syndrome
CDSS	-	Community Day Secondary School
DCP	-	Deputy Commissioner of Police
DAHI	-	Department of Animal Health and Industry
DHRMD	-	Department of Human Resource Management and Development
DHS	-	Demographic and Health Surveys
EO	-	Executive Officer
TO	-	Technical Officer
EPA	-	Extension Planning Area
GCE	-	General Certificate of Education
GDP	-	Gross Domestic Product
HAS	-	Health Surveillance Assistant
HIV	-	Human Immunodeficiency Virus
JCE	-	Junior Certificate of Education
MOAI	-	Ministry of Agriculture and Irrigation
MOEST	-	Ministry of Education, Science and Technology
MOHP	-	Ministry of Health and Population
MOWD	-	Ministry of Water Development
MPS	-	Malawi Police Service
MPSR	-	Malawi Public Service Regulations
NAC	-	National AIDS Commission
NACP	-	National AIDS Control Programme
NGO	-	Non-Governmental Organisation
OPC	-	Office of the President and Cabinet
PHC	-	Primary Health Care
RDP	-	Rural Development Project
SACP	-	Senior Assistant Commissioner of Police
SADC	-	Southern Africa Development Committee
SCO	-	Senior Clerical Officer
SMR	-	Standardised Mortality Ratio
STA	-	Senior Technical Assistant
STI	-	Sexually Transmitted Infection
TB	-	Tuberculosis
TT	-	Temporary Teacher
UNAIDS	-	Joint United Nations Programme on HIV/AIDS
UNDP	-	United Nations Development Programme
UNICEF	-	United Nations Children Fund
WHO	-	World Health Organization

Executive Summary

This report presents the findings of a study commissioned by the Government of Malawi to assess the impact of HIV/AIDS on human resources in the Public Service in Malawi. The overall purpose of the study was to establish the exact levels of attritions in the public services between 1990 and 2000 in order to provide an overall picture of the capacity gaps. Specifically, the study will assess attrition rates resulting from HIV/AIDS-related deaths. This information would enable the Government to adopt appropriate strategies and interventions to mitigate the impact of the epidemic on productivity in the public service.

Terms of Reference and Research Methodology

The Terms of Reference for the study were to:

- Establish the attrition rate by death for the period 1990-2000 in the Malawi Public Service;
- Identify occupational categories or skills most affected;
- Establish the attrition rate by death between gender and various age groups;
- Establish the level of vacancies caused by death and the time it takes to fill them taking into account occupational categories;
- Establish sickness levels among sector institutions and identify incidences of prolonged cases;
- Assess the impact of all the above on human resource demand and supply in the Public Service;
- Make appropriate recommendations for human resource capacity building interventions and measures to be adopted at the work place to improve human resource management practices.

Five Public Sector organisations were selected based on, among other things, their size and role in the economic and social development of the country, namely: Ministry of Health and Population (MoHP); Ministry of Education, Science and Technology (MoEST); Ministry of Agriculture and Irrigation (MoAI); Ministry of Water Development (MoWD); and the Malawi Police Service (MPS). Both quantitative and qualitative methods were employed during the course of the study.

Key findings

Attrition

- Between 1990 and 2000 there has been an increasing trend of attrition in the five organisations that were studied.
- The average attrition rate in four Ministries for the whole period was 2.3%. The highest attrition rate was reported in the MoWD with 15%, followed by the MPS (6.1%), the MoAI (4.8%) and the MoEST (1.6%).
- Death is the main cause of all cases of attrition, estimated at 50%. Retirement is relatively high, partly because of the enforcement of the Government's retirement policy in 1993. Of the organisations under review only the MPS recorded fewer retirements.
- The age and gender profile of deaths among public sector employees corresponds with the prevalence rates of HIV/AIDS in the general population.
- High mortality rates are noted mainly among technical cadres and frontline staff.
- Based on the NACP/NAC estimates of AIDS cases among professionals, 799 out of a total of 8,105 deaths are likely to be HIV/AIDS-related. However, this figure could be an underestimate.

Morbidity and absenteeism

- With the exception of the MPS, all the other public sector organisations that were assessed do not have a system of recording and monitoring absenteeism and its causes. Consequently, assessment of this has his has complicated the assessment of morbidity was rather difficult.
- Despite the lack of clear systems to record absenteeism, high levels of absenteeism are observed in all organisations, with sickness being the main cause.
- The sick leave policy is not implemented consistently due to laxity in enforcing rules and regulations in public service.

Vacancy levels

- All public sector organisations assessed show very high vacancy levels, which are due to high attrition rates.
- The average vacancy rate in the MoEST is 58%, and is highest among secondary school teachers (77%).
- The vacancy rate in the MoWD has increased from 18% in 1995 to 52% in 1999.

- Almost all occupational categories in the MoAI show an increase in vacancy rates between 1996 and 2000. The highest vacancy rate is recorded among Department of Animal Health and Industry (DAHI) professionals, estimated at 67% in 2000.
- The MoHP shows relatively high vacancy rates. However, different occupational categories show mixed trends.
- In the MPS, large vacancies are found among recruits and at senior officer level.
- The current recruitment system does not facilitate the expedient filling of vacancies.

Workload

- High vacancy rates and increased absenteeism result in more workload pressures on available staff. This leads to added stress, burnout and negatively affects staff morale.

Productivity and performance

- Although it is difficult to quantify the impact of increased morbidity and mortality on productivity, however, in all ministries there is evidence of a decline in productivity and individual staff performance.

Financial implications

- Financial implications of HIV/AIDS-related morbidity and absenteeism relate to the cost of replacement of deceased officers, funeral costs, death benefits and the cost of care and support for sick officers.

- The study found that the five organisations assessed are likely to have utilised between MK 57.4 million and MK 84 million on HIV/AIDS-related costs during the period under review. Based on the fact that these organisations constitute 79% of the total Public Sector, it is estimated that HIV/AIDS-related expenditure may have cost the between MK 6.6 million and MK9.6 million per annum. Most of these financial implications are not budgeted for.

Service provision

- The erosion of the human resource and financial capacity of the organisations impacts negatively on the quantity and quality of services provided.

Conclusions and recommendations

Four main conclusions can be drawn from the findings presented in this report. These are as follows:

1. There is adequate evidence of a high magnitude of human resource capacity erosion in the Public Service between 1990 and 2000. Death is the main cause of this, followed by retirement and resignations, especially among professional and technical cadres. HIV/AIDS has contributed significantly to the capacity erosion in the five organisations.

2. There is evidence that female employees in the civil service die at an earlier age than male employees.

3. There is ample evidence of institutional vulnerability to HIV/AIDS of all organisations surveyed. This vulnerability can largely be attributed to the fact that they operate: a) in a policy environment that is not yet sensitive to HIV/AIDS; b) with very high vacancy rates; c) with inadequate financial and material resources, and, d) substantial information gaps due to lack of comprehensive information management systems.

4. There is evidence that government is spending enormous amounts of scarce resources on ever-increasing levels of sick officers and funerals, both of which are to a significant extent the consequence of HIV/AIDS. As a result, the opportunity cost is very high since the resources have to be diverted from productive purposes, hence affecting the core business of the government.

These general conclusions form the basis for the recommendations contained in this report. The following are the recommendations:

Information Management Systems

1. Government should put in place comprehensive information management systems to ensure the recording and monitoring of morbidity, mortality and absenteeism. This

will enable public sector organisations to monitor the loss of productivity and the financial implications of these variables.

2. Computerised information management systems should be introduced throughout the public service. This would facilitate the dissemination of information between departments, which is particularly useful where it concerns operations that are intersectoral and interdependent.

3. Information systems in each government institution should be disaggregated by gender, age and occupation to provide better data for monitoring and human resource planning. This data needs to be up-dated on a regular basis.

4. National AIDS Commission (NAC) should conduct regular HIV/AIDS surveillances in the public service to come up with more realistic projections on HIV prevalence.

5. Ministries/departments should collect and disseminate information on HIV/AIDS.

Policy Recommendations

6. More resources for capacity building should be targeted to sectors where mortality is disproportionately high.

7. In view of the high expenditure on funerals there is need for:
   a) Each government institution to budget for and record funeral costs;
   b) DHRMD, in close collaboration with Ministry of Finance and Economic Planning, should facilitate the establishment of Welfare Funds in all government institutions and promote employee contributions towards funeral costs as is the case in the Police Service to ensure cost sharing;
   c) A mechanism of cost sharing funeral expenses should de developed.

8. Government should identify services that could be automated to avoid disruption in service delivery due to high attrition rates.

9. DHRMD should put in place a mechanism that facilitates the fast tracking of the recruitment system to ensure continuity of government operations.

Capacity Building

10. A comprehensive incentives package should be developed to cater for the skills that are difficult to replace.

11. Government should explore possibilities of using UNVs, as a short - term measure to replace critical capacities.

12. Government should institute performance management or results oriented appraisal system.

13. Government should consider increasing the Malawi Government Scholarship Fund to cater for the development of critical skills. Donors can also assist by supporting the training of critical skills in particular sectors, which are highly affected by HIV/AIDS.

Mainstreaming HIV/AIDS in the Workplace

14. Each sector should develop an HIV/AIDS Workplace policy, which is specific to its work environment and operations.

15. All members of staff in every ministry/department should be sensitised on HIV/AIDS, and should be fully involved in HIV/AIDS prevention and mitigation activities.

16. Government should consider exploring the possibility of providing Anti-Retroviral drugs (ARVs) to its employees. Further research is required on the cost implications of providing such treatment in comparison with current expenditure on HIV/AIDS related morbidity and mortality in Public Service organisations.

A. Introduction

In 2001, the Government of Malawi, with the support of the United Nations Development Programme (UNDP), commissioned a study to assess the impact of HIV/AIDS on human capital development, supply and productivity in the Malawi Public Service. Although no systematic study on the impact of HIV/AIDS on the Malawi Public Service had been conducted since the advent of the epidemic, there was general acknowledgement that the effects of HIV/AIDS in the workplace are considerable. These include irregular attendance and absenteeism, low productivity due to HIV/AIDS-related illnesses, vacancies and shortage of labour, and increased health and funeral costs. The overall effects are high labour costs and a weak human resource base, which undermine the capacity of the Government to effectively deliver programmes and services.

The study was commissioned on the premise that a significant proportion of deaths that have occurred in the Public Service between 1990 and 2000 might have been due to HIV/AIDS-related illnesses. Thus, the overall purpose of the study was to establish an accurate picture of morbidity and mortality trends in the Malawi Public Service over the past 10 years. This information would enable the Government to adopt appropriate strategies and interventions to mitigate the impact of HIV/AIDS on productivity in the Public Service. It would also enable the Department of Human Resource Management and Development (DHRMD), as a central agency for human resource issues in the Malawi Public Service, to take the impact of the HIV/AIDS epidemic into account in human resource planning and management.

Structure of the report

This report is divided into six sections. To contextualise this particular study on the impact of HIV/AIDS on the Public Sector of Malawi, the report continues by describing the profile of the HIV/AIDS epidemic in Malawi (Section B). The conceptual framework for the study is presented in Section C. This section discusses the rationale for the study and defines conceptual issues that are critical for the analysis of the findings. It also provides a broad framework for assessing the impact of HIV/AIDS on the Malawi Public Service. Section D introduces the objectives of the study and discusses the research methodology and the research limitations. The research findings are presented in Section E. After discussing each

Ministry individually, a cross-sectoral analysis is included to highlight the overall impact of HIV/AIDS on the Malawi Public Service. The final section (F) draws conclusions and articulates recommendations to pre-empt and mitigate the impact of HIV/AIDS on the Malawi Public Service.

It is hoped that the analysis in this report will assist the Government of Malawi, and the Department of Human Resource Management and Development (DHRMD) in particular, in formulating appropriate policies and strategies to ensure that the multiple impacts of HIV/AIDS-related attrition, morbidity and absenteeism, and vacancies in the Malawi Public Service are understood and minimised. It is also hoped that the analysis and recommendations will guide donors to focus on specific areas of assistance.

B. The HIV/AIDS Epidemic in Malawi

HIV/AIDS has reached devastating proportions, especially in sub-Saharan African countries like Malawi. Since the start of the epidemic, an estimated 60 million children and adults have been infected with HIV/AIDS worldwide, of which about 20 million have died. In 2001 alone about 5 million new infections occurred. Currently, 40 million people are living with HIV/AIDS, of which about 95% live in developing countries. Out of every ten HIV-infected people, seven live in sub-Saharan Africa. It is estimated that about one third of those currently living with HIV/AIDS are between the ages of 15 to 24 years (UNAIDS/WHO, 2001).

This section describes the scale and manifestation of HIV/AIDS in Malawi. It also discusses the impacts of HIV/AIDS on households, life expectancy, the labour force and key social and economic sectors such as education, health and agriculture. Because there is a significant time lapse between HIV infection and HIV/AIDS-related illness and death, many of the impacts will only make themselves felt in the near future. This section therefore draws on the observed and anticipated effects of the epidemic in other developing countries, especially in sub-Saharan Africa. Before looking specifically at the nature and manifestation of the HIV/AIDS epidemic in Malawi, some basic facts and figures about the people of Malawi, the economy and recent trends in social development are presented.

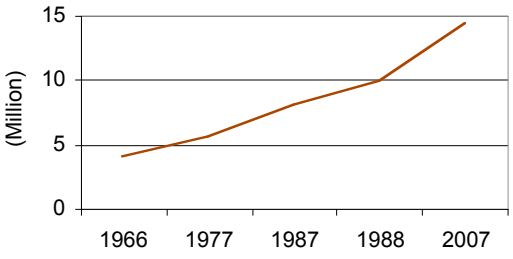
Profile of Malawi

Malawi is a Southern-Central African country located between Mozambique, Zambia and Tanzania.

The people

According to the 1998 census, Malawi has about 9.93 million people (Government of Malawi, 2000). Over the past three decades, the population of Malawi has more than doubled: from 4 million in 1966 to 5.54 million in 1977, 7.98 million in 1987, and 9.93 million in 1998 (see Graph 1). The

Graph 1. Population Growth in Malawi



average annual growth rate increased from 3.3% in 1966 to 3.7% in 1987, after which it fell to 2.0% in 1998. In 2007, Malawi is estimated to have a population of 14.4 million.

The 1998 census results show that there are 4.9 million (49%) men and 5.0 million (51%) women. This means that the national sex ratio is 96 males per 100 females. Around 2.4 million women are in the childbearing ages (15-49 years).

The population of Malawi is young and continues to get younger. According to the Human Development Report (UNDP, 2001a), in 1999 almost half of Malawi's population (46%) was below the age of 15. Close to one in every six persons (or 1.7 million) is a child under the age of five years old. About 4% of the population is aged 65 years or older. This age structure of the population puts great stress on Malawi's limited social services.

Malawi is a socially diverse country, with various ethnic groups and religions. Most Malawians are Christian (7.9 million or 80%), followed by Muslims (1.3 million or 13%) and traditional believers (National Statistical Office, 2000).

The majority of Malawians live in rural areas. Whereas in 1999 about one in four (24%) Malawians lived in urban areas this is expected to increase to 44% in 2015 (UNDP, 2001a).

The economy

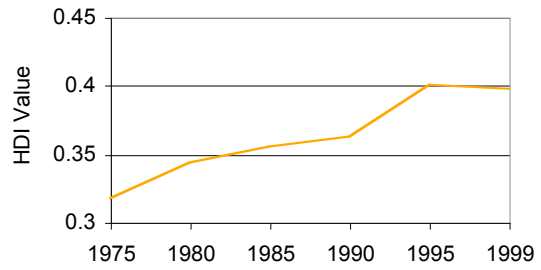
Malawi is one of the poorest countries in the world. In 1998, Gross Domestic Product (GDP) per capita was estimated at US$ 165, below the 1992 estimate of US$ 200. It is estimated that 54% of the population of Malawi lives below the national poverty line (UNDP, 2001a). However, the report *Profile of Poverty in Malawi* (1998) puts the number of Malawians living below the poverty line at 65.3%. The same report suggests that anyone who can afford a daily expenditure of MK 11.16 (about MK 350 per month) lives above the poverty line.

The economy of Malawi depends on rain-fed agriculture. It accounts for 35% of the country's GDP, 93% of its export earnings and employs about 85% of the population. Manufacturing, on the other hand, accounts for only 14% of GDP. Because of its heavy dependency on agricultural output, the country's economy remains highly vulnerable. Over the years, GDP growth has fluctuated between positive and negative figures and there has not been any

significant improvement in the standard of living of most Malawians. Over 80% of the labour force is employed in the informal sector.

Human development

Graph 2. Human Development Trends in Malawi, 1975-1999



Malawi is considered a country with low human development. It currently ranks 151 (out of 162 countries listed) in the Human Development Index (UNDP, 2001a). Graph 2 shows the trends in human development in Malawi between 1975 and 1999. Between 1975 and 1995, there has been consistent improvement in the human development of Malawi as measured by the Human Development Index[1]. For example, life expectancy improved from 45 years in 1987 to 48 years in 1995. Adult literacy rates have also improved. According to the population census of 1998 (Government of Malawi, 2000), about 58% of the population aged 5 years or older are able to read and write at least one particular language. The adult literacy rate in 1999 was 42% compared to 38% in 1987. At 51%, the adult literacy rate among women is below male literacy rates (64%). In 1987, the literacy rates were 32% for women and 52% for men.[2]

However, in 1999 a drop in the value of the human development index is recorded. Life expectancy has decreased to 40 years (UNDP, 2001a). According to the recent Human Development Report (UNDP, 2001a), Malawians have a 50% probability at birth of not surviving to the age of 40 and a 66% probability that they will not reach the age of 60.

It is envisaged that human development achievements are increasingly under pressure as a result of the HIV/AIDS epidemic. The population dependency ratio, already quite high, continues to increase with the advent of HIV/AIDS as a result of the growing numbers of orphans. According to available statistics, the ratio increased from 0.97 in 1977 to 1.01 in

[1] The Human Development Index (HDI) measures the average achievements in a country in three basic dimensions of human development: longevity, knowledge and a decent standard of living. The HDI is a composite index, which contains three variables: life expectancy, educational attainment (adult literacy and combined primary, secondary and tertiary enrolment) and real GDP per capita (in PPP$).
[2] The 2001 Human Development Report suggests that the adult (i.e. 15 years and above) literacy rate in Malawi is 59%. The literacy rate among adult women and adult men is 45% and 74% respectively (UNDP, 2001a).

1987 and 1.06 in 1992. This could be the reason why many Malawian children work before the age of 15 and drop out from primary school.

Profile of the HIV/AIDS epidemic in Malawi

In 1985, the first AIDS case was discovered in Malawi. The AIDS epidemic in Malawi is caused by HIV-1, which is the dominant strain of HIV in Southern Africa. However, due to the fact that there has been a flow of visitors into Malawi and of Malawians travelling abroad, blood donations are also monitored for HIV-2.[3]

The main mode of HIV transmission in Malawi is through heterosexual sex. Of the new AIDS cases reported in 1995, it was estimated that heterosexual sexual contact accounted for approximately 90%, mother-to-child transmission for 8% and blood transfusion for only 2% (NACP, 2001).

There are no national surveys to assess the HIV prevalence rate[4] amongst the Malawian population. In the absence of this data, the most commonly used estimate of HIV prevalence in the reproductive age group is based on women visiting antenatal clinics. According to National AIDS Control Programme (NACP) estimates, 16.4% of Malawians between 15 to 49 years old are HIV positive (Malindi, 2001). The infection rate in women varies from 10% in rural areas to 30% in urban areas. According to the 2001 Sentinel Surveillance Report by the NACP, urban HIV prevalence rates were 22.5% as compared to 10.7% for the rural areas. There are indications that HIV infection rates in urban areas are stabilising. By 1995, the rate of HIV prevalence in antenatal clinics in Blantyre had increased dramatically since the late 1980s. In the last few years it appears to be levelling off. Statistics relating to Lilongwe and Mzuzu suggest that prevalence in these cities may have peaked at a lower rate. In contrast, the rate of infection in rural areas is increasing rapidly.

The estimated national prevalence rate of 16.4% points to the severity of the epidemic, especially in comparison to the rest of sub-Saharan Africa where the average adult prevalence rate is 8.4% (UNAIDS/WHO, 2001).

[3] So far, nine different subtypes of HIV-1 have been discovered in different areas and there is an increasing spread of each subtype. HIV-2 is a slower acting virus that is mainly found in West Africa. It is now slowly diffusing into other parts of the world.

Table 1. Malawi Reported AIDS Cases by Year

Year	Cases	Cumulative
1985	17	17
1986	127	144
1987	858	1,002
1988	3,034	4,036
1989	4,966	9,002
1990	5,859	14,861
1991	7,439	22,300
1992	4,655	26,955
1993	4,916	31,871
1994	4,732	36,603
1995	5,172	41,772
1996	5,370	47,145
1997	3,653	50,798
1998	1,845	52,643

Another method of assessing the extent and spread of HIV infection is to look at reported AIDS cases. The AIDS Cases Surveillance System is based on monthly returns from a number of screening sites throughout the country. The return contains demographic, clinical and laboratory data relating to AIDS cases. Table 1 shows the reported AIDS cases from 1985 to 1998. Over the past few years, the annual number of new cases appears to have reduced from over 5,000 in 1995 and 1996 to 1,845 in 1998. The cumulative number of reported AIDS cases since 1985 is 52,643.

However, there are some noted problems in diagnosing AIDS. The World Health Organization (WHO) criterion for clinical diagnosis of AIDS is that a single positive HIV test result must be obtained. The NACP (recently reconstituted as the NAC)[5], the body responsible for monitoring and reporting on the AIDS epidemic in Malawi, acknowledges that the positive test requirement gives rise to under-reporting. Firstly, the limited supply of test kits often requires that these kits be held in reserve for testing donated blood. Secondly, some patients whose condition can clinically be diagnosed as AIDS refuse to be tested. Thirdly, the administration of the HIV test requires a level of personnel and expertise that is not always available. Thus, given the problem of under-reporting and the variability in length of the incubation period, reported AIDS cases can at best give an indication of HIV infection rates rather than being an accurate estimate.

[4] The prevalence rate refers to the number of people infected in relation to the total population. The incidence rate refers to the proportion of new infections in relation to the total population.
[5] See footnote 1.

Box 1. Opportunistic Infections Associated with HIV/AIDS

HIV undermines the immune system. A person who is infected with HIV may pass through long stages of being healthy and chronically ill before becoming terminally ill. When the body's immune system is weakened, the body is no longer able to effectively fight against the many types of micro organisms normally found around us – bacteria, fungi, parasites and viruses.

Micro-organism	Organ Affected	Symptoms
- Pneumocystis carinii	Lungs	Fever, cough, shortness of breath, pains in chest
- Mycobacterium tuberculosis	Lungs	Fever, cough, chest pains, dyspnea
- Cryptosporidium - Candida Albicans - Mycobacteria TB - Atypical Mycobacteria - Atypical Isospora	G.I. Tract	Chronic diarrhoea, weight loss, difficulty in swallowing, abdominal pains, vomiting.
- Toxoplasmosis - Cryptococcus	Brain	Headaches, impaired mental functioning, impaired cognitive functioning, seizures, peripheral neurological impairments
- Cytomegalo Virus	Eyes	Blindness, visual impairment
- Herpes Zoster - Herpes Simples - Candida Albicans - Unidentified	Skin (Mucocutaneous)	Oral and per-oral lesions, shingles, extremely pruritic generalized skin rashes, cancers, including kaposis sarcoma

In 1995, as in the previous years, over 80% of suspected AIDS cases were substantiated by testing. As a result, and on the recommendation of the NACP, the Ministry of Health and Population (MOHP) decided that from 1996 onwards symptomatic diagnosis of HIV/AIDS would be sufficient for NACP reporting purposes. There are various opportunistic diseases associated with HIV/AIDS (see Box 1). For diagnosis of AIDS, the Malawi case definition stipulates the presence of at least two major signs and one minor sign in addition to the presence of HIV antibodies (see Box 2).

Box 2. MOHP Approved HIV/AIDS Signs and Symptoms

Major signs	Minor signs	Specific signs
·Significant loss of weight of 10% per month ·Chronic diarrhoea ·Prolonged or intermittent fever over one month or more	·Persistent cough for one month productive or non-productive ·Generalised skin rash ·Herpes Zoster ·Oropharygeal candidiasis ·General Lymphadenopathy	·Aggressive or lymphadenopathic Kaposis sarcoma. ·Upper Git candidiasis ·Cryptococcal Meningitis ·HIV dementia ·Pneumocystis carini pneumonia (PCP) ·Tuberculosis of all types ·HIV wasting syndrome ·Respiratory anaemia

Table 2 further disaggregates the number of AIDS cases in Malawi in terms of age group and sex. It shows an increase in reported AIDS cases from 1995 to 1996, after which a decrease is recorded. It reveals that the majority of reported cases affect young adults between the ages of 20 to 40. This is not surprising, given that this group constitutes the majority of sexually active people. Furthermore, young adults tend to form the bulk of populations on the move, in

search of work opportunities and economic security. In the context of HIV/AIDS, migration and mobility are considered risk factors that enhance vulnerability to HIV/AIDS.

Another observation that can be drawn from Table 2 is that reported AIDS cases in the 0-4 age group is disproportionately high, varying between 7-9% of annual cases. This suggests that mother-to-child transmission is a significant mode of HIV infection in Malawi. Again, Malawi is not unique in this regard. In sub-Saharan Africa, there are an estimated 1.1 million HIV-positive children (UNAIDS, 2001). Nine out of ten HIV-positive children are infected through mother-to-child transmission (UN Regional Task Force on Prevention of Mother-to-Child Transmission of HIV, 2001). A key factor in mother-to-child transmission in Malawi is the culture of exclusive breastfeeding, which significantly increases the risk of infection for babies. Furthermore, social norms in Malawi encourage high fertility rates by attaching great importance to children. In a context of limited access to counselling and testing for pregnant women, there is little possibility of preventing mother-to-child transmission.

Because Table 2 only reflects AIDS cases, it does not reveal the increasingly high HIV infection rate among youth. According to the NACP (1999), in 1998 46% of new infections occurred among those between 15-24 years old, of which 60% occurred among girls. Not only do young age groups account for a bigger proportion of the population, but individuals who are infected at a younger age also tend to survive longer and continue to be counted among those living with HIV.

Table 2. Age and Sex Distribution of Reported AIDS Cases in Malawi (Figures in Thousands)

Age	1995			1996			1997			1998		
	male	*female*	*total*	*male*	*female*	*total*	*male*	*female*	*total*	*male*	*female*	*total*
0-4	192	172	*364*	252	223	*475*	179	154	*353*	64	66	*130*
5-9	30	24	*54*	44	47	*91*	37	30	*67*	10	15	*26*
10-14	11	24	*35*	18	33	*51*	18	14	*32*	90	12	*21*
15-19	19	141	*160*	20	125	*145*	10	55	*65*	9	34	*43*
20-24	164	551	*715*	150	486	*636*	120	284	*404*	46	133	*179*
25-29	431	529	*960*	376	580	*956*	277	332	*609*	120	179	*299*
30-34	551	524	*1075*	616	568	*1184*	464	359	*823*	236	196	*432*
35-39	455	288	*743*	436	313	*749*	328	234	*562*	174	135	*309*
40-44	291	187	*478*	300	178	*478*	210	106	*316*	117	76	*193*
45-49	220	79	*299*	196	111	*307*	150	71	*221*	82	42	*124*
50+	213	76	*289*	206	92	*298*	164	57	*221*	62	28	*90*
Total	**2,577**	**2,595**	***5,172***	**2,614**	**2,756**	***5,370***	**1,957**	**1,696**	***3,653***	**929**	**916**	***1,845***

Source: Aids Cases Surveillance Reports

Table 2 also reveals a gender dimension to HIV/AIDS. In 1995 and 1996, women outnumber men among reported AIDS cases. This trend is reversed in 1997 and 1998. Furthermore, in the younger age categories higher numbers of AIDS cases are recorded among girls and women. AIDS cases among women start to peak in age group 20-24 and only start to decline from age group 35-39 onwards. AIDS cases among men peak later and are concentrated in the age group 25-39. This is an important revelation about the profile of AIDS, which can be used where the link between death and AIDS has not been established.

The observed gender dimension to the AIDS epidemic is not unique to Malawi. In developing countries, especially in sub-Saharan Africa, young women show far higher HIV infection rates than young men. According to reports from worldwide population studies, the average infection rate in teenage girls is over five times higher than the infection rate in teenage boys. The studies show that among young people in their early twenties, the infection rates were three times higher in women than in men. This discrepancy is largely due to age mixing between young women and older men, who have had more sexual experience and are more likely to expose girls and young women to HIV. For medical reasons, women are more easily infected during intercourse with an infected partner than men. Medical specialists also suggest that women get sexually mature and active at an earlier age than men. In addition, gender inequality is clearly a decisive factor. Women's inferior social status makes them particularly vulnerable to HIV infection, as they are least able to negotiate safe sex or prevent sexual violence. These factors help to explain why in sub-Saharan African countries there are an estimated 12 women living with HIV/AIDS for every 10 men (UNAIDS, 2000).

In addition to young adults (and, to a lesser extent, infants) and women, poor people are also considered particularly vulnerable to HIV/AIDS. Although the majority of people living with HIV/AIDS are considered poor, this is not to suggest that all people living with HIV/AIDS are poor. However, the key difference is that risk behaviour of middle class people is largely a matter of power and choice, whereas poverty forces people into behaviour that puts them at risk of infection (Baylies, 2000). Poverty often leads people to engage in survival strategies that are conducive to the spread of HIV, such as migration and engagement in (commercial and non-commercial) sex work (UNAIDS, 2001). Furthermore, education and health care services that could reduce the risk of HIV infection, like treatment for sexually transmitted diseases and access to condoms, are often not equally available or affordable to poor people.

Although Table 2 does not include data on the relative wealth and poverty of those living with HIV/AIDS, the high HIV prevalence rate in Malawi could be related to the high number of Malawians living below the national poverty line.

Factors facilitating the spread of HIV/AIDS

It is worth noting that a high HIV/AIDS prevalence rate does not mean that the people of Malawi are not aware of HIV/AIDS and its devastating impacts. According to a Demographic and Health Surveys (DHS) Report (2000), public awareness of HIV/AIDS is in fact quite high. It reports that 99% of interviewed women and 100% of interviewed men had heard about AIDS. Knowledge of someone who is living with HIV/AIDS or has died from AIDS has increased significantly, especially among men. In 1996, 71% of women and 68% of men indicated that they knew someone with HIV/AIDS. In 2000, this increased to 72% of women and 82% of men (DHS, 2000, p. 151). Similarly, a recent study conducted by Project Hope in the Ministry of Labour and Vocational Training shows that knowledge of HIV/AIDS, sexually transmitted infections (STIs) and tuberculosis is very high. However, knowledge alone is not sufficient to influence people's sexual behaviour. Factors other than awareness need to be considered as well.

The preceding discussion has shown that certain social groups are particularly vulnerable to HIV infection. These include women, youth / young adults and poor people. It is obvious these are not isolated categories, but that there is a significant overlap between them. In explaining the vulnerability of these social groups to HIV/AIDS, gender inequality, relative poverty and wealth, and strategies to acquire economic security, such as migration, have been highlighted as significant factors.

In addition, other factors may have facilitated the spread of HIV/AIDS. These include the hidden nature of the virus, recent processes of political and social change in Malawi, and dominant cultural beliefs and practices.

The hidden nature of HIV

There is a long incubation period of about 8-10 years between HIV infection and HIV/AIDS-related illness and death. Faced with more immediate survival concerns, the long-term threat posed by HIV/AIDS can easily be underestimated. Also, despite relatively early awareness of

HIV/AIDS in Malawi, its devastating impact was not well understood, neither by individuals nor by the Government.

Political and social change

It is difficult to establish a causal relation between processes of political and social change and the spread of the HIV/AIDS epidemic in Malawi. Clearly, HIV/AIDS predates the emergence of multi-party politics in Malawi. However, some recent trends may have facilitated the spread of HIV/AIDS. The liberalisation of the economy of Malawi has, amongst others, facilitated increased mobility, which is considered a risk factor in the spread of HIV/AIDS. It has also resulted in increased income generation opportunities for some, which may have allowed some people to indulge in risky sexual behaviour, whereas others have found themselves further trapped in poverty, which may have forced them to engage in commercial or non-commercial sex work and other survival strategies conducive to the spread of HIV/AIDS. Likewise, democratisation has led to increased social movement. Furthermore, it has been reported that in other African countries processes of social change have resulted in marriage at a later age, changing sexual norms and values and changing patterns of sexual behaviour (Baylies, 2000). All of these could enhance vulnerability to HIV infection.

Cultural beliefs, values and practices

Because the majority of HIV infections in Malawi occur through heterosexual practices, it is important to examine key beliefs and practices related to sexuality that facilitate the spread of HIV/AIDS. In Malawian culture, sex is of great importance. Although most religions advocate abstinence before marriage and faithfulness in marriage, cultural norms and values define masculinity in terms of sexual prowess and sexual activity. This encourages male promiscuity. At the same time, girls are advised not to say no to a husband when he wants sex, even when they know that their husband has been having sexual encounters outside of marriage. Increasingly, monogamous women are at risk of HIV infection through their promiscuous husbands. Those religions advocating abstinence and faithfulness do not support the use of condoms as this is seen as promoting promiscuity. This perspective hampers interventions to prevent the spread of HIV/AIDS.

There are a number of traditional beliefs and customary practices associated with sex in Malawi that facilitate HIV transmission. These include ‘hyena’ use, initiation rites,

circumcision, death rites, healing process and enrichment through charms. All these involve having sex with other people rather than one's spouse. For instance, when a couple is having difficulties to bear children an arrangement is made that a different man ('hyena') should be coming into the house at night to have sex with the woman with the consent of the husband. Similarly, for charms to be effective there are conditions such as having sex with one's mother, sister or daughter. Likewise, at the end of initiation ceremony boys and girls are trained on how to engage in sex.

Widow inheritance is also practiced in some parts of Malawi. When a husband dies, one of his surviving brothers is expected to inherit the widow to ensure that she and the children will be taken care of. This exposes the widow and the inheritor to the risks of HIV/AIDS.

Polygamy is accepted in Malawi amongst certain tribes and religions, in particular amongst Muslims and traditional believers. Most of the Christian churches discourage polygamy, considering it a sin. Those religions that do allow polygamy have no institutionalised ways of ensuring that both parties are free of HIV infection.

Impacts of HIV/AIDS

The HIV/AIDS epidemic has devastating impacts at various levels, from the individual and household level to communities and society as a whole, including political and administrative systems. This is particularly the case because the epidemic disproportionately affects young adults, who are central to economy and fulfil important functions as workers, breadwinners, parents, educators, health care providers, and so on.

Impacts at household level

The immediate impacts of HIV/AIDS are felt at the individual and household level. Apart from the psychological trauma, HIV/AIDS-related illness and death of an adult family member leads to a significant reduction in household income. At the same time, ill health means an increase in health care costs, whether the sick person turns to a traditional healer or to public health services. Decreased income combined with additional expenditure inevitably means fewer purchases, diminishing savings, low availability of food and reduced nutrition in the family. The result is more and deeper impoverishment.

Families make great sacrifices to provide treatment, relief and comfort for a sick relative, especially a breadwinner. The burden of care for the sick and dying traditionally falls on the shoulders of women. When family members in urban areas fall ill, their relatives from the village come to help and care for them, thus adding to the call on scarce resources and increasing family expenditure. Reduced household income can also force families to remove their children from school. Increasingly, children are expected to take on 'adult' roles, like contributing to household income, performing household tasks and looking after siblings or sick parents. With young adults mostly affected by HIV/AIDS, there is also pressure on elderly people to assume these responsibilities.

Of particular concern is the increase in the number of AIDS orphans. In sub-Saharan Africa, more than 12 million children have been orphaned because of HIV/AIDS. Orphans are likely to suffer an interrupted or abruptly ended education, malnutrition and abandonment. Orphanhood is also associated with child labour and the phenomenon of child-headed households.

Demographic impacts

In countries with high HIV prevalence rates, adult mortality increases significantly. Data from small community-based studies show that in countries with an adult HIV prevalence rate of just below 10% almost 80% of all deaths among young adults aged 25-45 years old are associated with HIV/AIDS. The proportion of HIV/AIDS-related deaths is likely to be even higher in areas with higher HIV prevalence rates. According to NACP, HIV/AIDS is the major cause of adult death in Malawi. Secondly, HIV/AIDS leads to an increase in infant mortality, as up to a third of babies born to HIV-positive mothers are likely to be infected through mother-to-child transmission.

Increased mortality rates have a direct impact on life expectancy and population growth rates, which are expected to slow down. Given the high fertility rates in sub-Saharan Africa, it has been estimated that adult HIV prevalence rates would have to exceed 50% to cause population growth rates to become negative (Clair Jones, 11). Instead, in Malawi the population is expected to continue to grow, but at a much lower rate compared to a situation without HIV/AIDS. Estimates suggest that by 2010 the rate of population growth will have halved, whilst mortality will more than double. Furthermore, the increase in deaths of young

adults will significantly alter the age profile of the population, which will become progressively younger.

Impacts on education

Education is an important building block in a country's development. In areas with high HIV prevalence rates, HIV/AIDS-related illness and death are taking their toll on education in various ways. Firstly, the supply of teachers is eroded as an increasing number of teachers become infected with HIV. This results in increasing class sizes, which is likely to have an effect on the quality of education. Secondly, inspectors in schools and other administrators will become fewer leading to less and less school supervision. This can negatively affect the quality of teaching and of the education system in general. Furthermore, families who cannot afford to pay school fees or need additional income are likely to take their children out of school to marry, look after siblings or enter the workforce. Children orphaned by HIV/AIDS are most likely to drop out of school (UNDP, 2001b). The dual pressure on supply and demand in the education sector will lead to the collapse of educational systems, which ultimately undermines the prospects of national development.

Impacts on public health

The increased demand for treatment and care of people living with HIV/AIDS is heavily taxing the already overstretched public health services of many developing countries. As a consequence, patients suffering from other conditions are being crowded out. According to NACP (1999), over 70% of bed occupancy in public hospitals in Malawi is considered HIV/AIDS-related. The shifting and growing demand on health care systems is underscored by the exploding tuberculosis epidemic in countries most heavily affected by HIV/AIDS. In Malawi, tuberculosis cases have increased sharply from 5,000 to 23,000 between 1985 and 2000 (NACP, 1999). As HIV weakens people's immune systems it makes them far more vulnerable to developing active tuberculosis. In sub-Saharan Africa, tuberculosis has become the leading cause of death among people with HIV infection, accounting for about 40%. In Malawi, it has been estimated that 77% of tuberculosis cases are HIV-related (World Bank, 1998).

Given the expansion of the epidemic, and particularly the delay between HIV infection and ill health, its impact on the health sector over the coming decade is expected to be greater than in the past two decades combined. The development of new therapies and vaccines for HIV-

infected persons will further raise health sector costs for infrastructure, drugs, training, and personnel expenditures. At the same time, HIV-related illness and premature death amongst health care workers will continue to create costs of a different kind for the health sector. As yet, few countries have fully understood the impact of the epidemic on human resources in the public health sector. As with education, the quality of health care will be under threat because of the depletion of health care personnel.

Impacts on the labour force

The negative impacts of the HIV/AIDS epidemic on the labour force are far-reaching. It erodes the workforce, as most of those affected by HIV/AIDS are under the age of 35. As Lodh (1995) argues, this reduces the "efficiency age" of the labour force as new recruits are younger and less experienced. The impacts on the economy of Malawi are devastating:

> "Whereas it is assumed that the average Malawian is expected to be employed for about 25 years between the ages 15 and 65, the average adult HIV-infected Malawian will work for only 10 years for the same age group. This loss of 15 productive years is translated into 20 years of loss for urban workers and about 14 years for rural workers. From this, total national loss of earnings and productivity (discounted or undiscounted) is enormous and hence a considerable drain of resources of the nation." (Lodh, 1995, p. 9)

HIV/AIDS leads to lower productivity due to absenteeism, staff turnover, loss of skills and experience, and declining staff morale. At the same time, employers will face increased costs arising from higher levels of spending on health and death benefits, additional staff recruitment and training of new employees.

Impacts on agriculture

Agriculture is one of the most important economic sectors in many developing countries, particularly when measured by the percentage of people dependent on it for their living. Although the sector may produce only 20% of a country's wealth (measured as a percentage of GNP), agriculture could provide a livelihood for as much as 80% of its population. The sector is also significant as a provider of employment. As mentioned before, the agricultural sector is of great significance to the economy of Malawi.

For families dependent on small-scale and crop farming as a livelihood strategy, HIV/AIDS-related illness and death of a farmer are devastating. Production will decline as farmers and those looking after them spend less and less time tending the crops. Income will be lost from unsold or incompletely tended cash crops and families are forced to buy food they normally produce themselves. They may even have to sell off farm equipment or household goods to survive. The vicious circle is compounded by the increase in health care costs.

Political and institutional impacts

HIV/AIDS has the potential to undermine and reverse development achievements by decades. Of particular concern is the inter-relationship between HIV/AIDS and poverty and inequality. On the one hand, poverty and inequality facilitate the spread of the epidemic. On the other hand, HIV/AIDS results in greater impoverishment, stigma, discrimination and inequality, all of which increase people's vulnerability to HIV infection. Thus, not only does HIV/AIDS manifest itself along the social divisions in a society, it also has the capacity to reinforce and exacerbate inequality. The cumulative impact of HIV/AIDS will seriously challenge political and administrative systems. With the public sector itself badly affected by the loss of skilled and experienced employees to the epidemic, the ability of the government to provide services is compromised. At the same time, there will be increased demands on the government to curb the epidemic and mitigate its impacts.

Conclusion

With almost one in five adults living with HIV/AIDS, the HIV/AIDS epidemic in Malawi has reached alarming proportions. As has been shown in this section, the nature, manifestation and impacts of HIV/AIDS in Malawi is similar to heterosexually transmitted HIV/AIDS epidemics elsewhere in sub-Saharan Africa. Certain social groups, particularly poor people, young adults, women, and increasingly children, show a disproportionately high level of vulnerability to HIV infection and to the devastating impacts of HIV/AIDS. The scale and features of HIV/AIDS suggest that HIV/AIDS will reverse and curtail development prospects, especially because of its tendency to follow the fault lines of society and exacerbate social divisions. This poses a serious challenge to the government to improve the quality of life of all Malawians and to promote development. At the same time, the epidemic is eroding the capacity of the Public Sector to adequately respond to these challenges. The remainder of this report focuses on the impact of HIV/AIDS on human resources in the Malawi Public Service and its broader implications.

C. Conceptual Framework

This section describes the conceptual framework that has guided this study and clarifies relevant concepts. Because the central argument of the study is that HIV/AIDS results in capacity erosion, this section defines what is meant with organisational capacity of the Public Service. It also proposes a framework to assess the multiple impacts of HIV/AIDS on organisational capacity. This framework has been used to analyse the research findings.

Rationale for assessing the impact of HIV/AIDS on the Public Service

Just like in other sub-Saharan African countries, the Public Service in Malawi is a critical part of the executive arm of government. Thus, it plays a central role in governance and in facilitating economic and social development. Although in a liberalised economy like Malawi the private sector is increasingly looked at as the engine for economic growth, the efficiency and effectiveness of the public sector in providing the necessary infrastructure and services is critical for enhanced productivity. As such, underperformance of the public sector will adversely affect the development process.

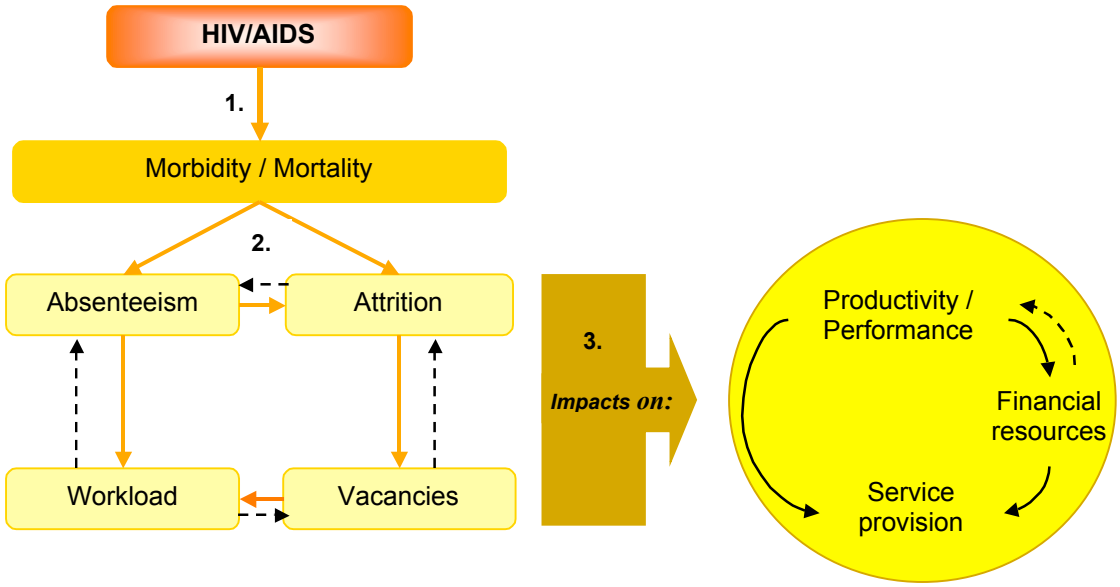
HIV/AIDS and capacity erosion

Capacity in this report refers to the ability of the Public Service to perform specific tasks and attain development objectives. It includes human, scientific, technological, organisational, institutional and resources capabilities. For the purpose of this study, capacity is broadly defined to include the ability to:

- Define a long-term vision for the organisation;
- Formulate sound policies and design programmes to support the organisational strategy;
- Mobilise resources required for the effective implementation of the organisational strategy;
- Implement and manage effectively the various programmes and projects;
- Monitor and evaluate various programmes and projects.

Through its impact on human resources, HIV/AIDS impacts negatively on all these functional capacities. Graph 3 illustrates that we can distinguish between different levels of organisational impacts of HIV/AIDS.

Graph 3. Organisational Impacts of HIV/AIDS



Firstly, HIV/AIDS results in increased *morbidity* and *mortality*. Morbidity refers to the proportion of ill individuals in a defined population (in this case, public servants), whereas mortality refers to the number of deaths.

Secondly, these two pathways of HIV/AIDS have particular impacts on human resource capacity. *Attrition* amounts to organisational loss of labour. It is usually grouped into two categories: voluntary and involuntary attrition. Death is an example of involuntary attrition. Attrition also includes dismissal, redundancy, resignation and retirement. The extent of attrition is an indication of the overall health of an organisation. While attrition cannot always be stopped, it is necessary for an organisation to determine the types and levels of attrition that are required and what types and levels of attrition should be avoided for the organisation to achieve its objectives. An analysis of attrition levels is an important aspect of human resource planning as it helps to predict future human resource requirements and to develop appropriate policies on and strategies for staff recruitment, development and activities.

Attrition leads to *vacancies*. Vacancies reflect a shortfall in the authorised staff establishment, which is the standard staffs mix to achieve the organisational objectives at any particular time. The analysis of vacancies in a particular Ministry is one way of ascertaining human resource demand. Any vacancy that occurs disrupts certain activities and can have adverse effects on the overall performance of an organisation.

At the same time, increased morbidity leads to increased *absenteeism*, defined as absence from work for unofficial reasons, which may eventually result in possible attrition (through dismissal, resignation, retirement, redundancy or death). Increased morbidity and mortality in society, amongst relatives and the community, will also lead to higher rates of absenteeism, when employees look after the sick or attend funerals.

Both absenteeism and vacancies result in a greater *workload* for other staff members. Whereas workload may not always be quantified, this study calculates the workload of particular civil servants on the basis of staff to client (e.g. pupils) or staff to general population ratios.

The black arrows depict the reinforcing trend of these impacts: for instance, if vacancies are high and workload is severe, more people are likely to stay away from work or leave the organisation for better work environments.

These four impacts (absenteeism, attrition, vacancies and workload) collectively impact negatively on three issues: productivity, finances and service provision. This is the third level of impact. As the graph shows, these factors also influence and reinforce each other in particular ways. The erosion of human resource capacity will negatively impact on the *productivity and performance* of individual employees and the organisation as a whole. Furthermore, it has significant *financial implications* related to recruitment and training, medical benefits, funeral costs and death benefits, amongst others. Overall, the erosion of human resource capacity will negatively affect the core business of the organisation and impede *service provision*.

Again, these factors are mutually enforcing. For example, to cope with the organisational impacts of HIV/AIDS financial resources are likely to be diverted away from service delivery, thereby further thwarting the quality and quantity of services. Similarly, a depletion of financial resources will further undermine the overall performance of the organisation.

Limitations of the model

Graph 3 does not include other factors that influence productivity, such as rewards/incentive systems or the availability of inputs other than human or financial resources. These factors

will also be influenced by HIV/AIDS. For example, incentive systems that rely on financial rewards will be undermined by the decreasing availability of funds resulting from the (often unplanned for) financial implications of HIV/AIDS. Similarly, incentive systems based on productivity and outputs are likely to aggravate workplace tensions and discrimination, if they are not informed by an understanding of the capacity of HIV/AIDS to erode the productivity and performance of HIV-positive employees.

Graph 3 also does not reflect the less quantifiable, emotional impacts of HIV/AIDS, which are also likely to impact negatively on productivity and performance. Whereas this report makes scant mention of these impacts, such as stress, fear, burnout and low morale, they should not be underestimated nor undervalued.

Furthermore, the model does not capture that loss of staff means loss of experience and institutional memory, which is critical for organisational continuity. Whereas people and skills can be replaced through proper human resource planning, experience and institutional memory are often irreplaceable.

In essence, Graph 3 captures the analytical framework that has been used in this study to assess the impact of HIV/AIDS on the Malawi Public Service. Despite the noted limitations, the model can also be useful in identifying potential entry points for policy and strategic intervention.

Institutional vulnerability

The extent to which an organisation is affected by HIV/AIDS-related morbidity and mortality is largely determined by its systems, structures, procedures and its resource base (after Barnet and Whiteside, 2000). In other words, these features constitute the degree of institutional vulnerability of an organisation. The key issues that are critical in analysing institutional vulnerability in this report include: an assessment of which groups of employees – disaggregated according to sex, age group and occupational category – are most affected; the ease of training or replacement of lost human resources; relevant human resource policies and their implementation; the capacity of organisations to bear the social and financial burdens of HIV/AIDS; and, the extent to which the organisation can absorb the shocks of the epidemic and be productive in an environment characterised by increased morbidity and premature death.

Conclusion

HIV/AIDS has the potential to undermine the capacity of the Public Sector of Malawi to facilitate social and economic development, provide governance and create an enabling environment for other actors, particularly the private sector, to engage in the development process. The extent to which this happens depends to a large extent on the institutional vulnerability to the impacts of increased morbidity and mortality. This section has introduced a model that will be applied during the course of this report to assess the multiple impacts of HIV/AIDS on the Public Sector of Malawi.

D. Research Objectives and Methodology

This section presents the research objectives and clarifies the methodology used to achieve these objectives. It also elaborates on the limitations of the study.

Terms of reference

The Terms of Reference of the study were as follows:

- Establish the attrition rate by death for the period 1990-2000 in the Malawi Public Service;
- Identify occupational categories or skills most affected;
- Establish the attrition rate by death between gender and various age groups;
- Establish the level of vacancies caused by death and the time it takes to fill them taking into account occupational categories;
- Establish sickness levels among sector institutions and identify incidences of prolonged cases;
- Assess the impact of all the above on human resource demand and supply in the Public Service;
- Make appropriate recommendations for human resource capacity building interventions and measures to be adopted at the work place to improve human resource management practices.

Methodology and approach

In view of the size of the public service of Malawi and the time given for the study, it was not possible to carry out a study that would comprehensively cover all the institutions in the public service. Instead, the study focused on selected institutions from which inferences regarding the whole Public Service could be made. The Ministries and organisations selected were the Ministry of Agriculture and Irrigation (MoAI), Ministry of Education, Science and Technology (MoEST), Ministry of Health and Population (MoHP), Ministry of Water Development (MoWD) and the Malawi Police Service (MPS).

The following considerations guided the selection of these Ministries:

- Their *size*, in terms of number of employees, to ensure a representative sample. The Ministry of Water Development was included to see whether trends in smaller ministries would be different from those in large ministries.
- Their *contribution to poverty reduction and economic development* of the country.

Purposive sampling was also used to select the occupational categories in each organisation. The study focused specifically on those categories that are essential in achieving the mission and objectives of the selected ministries. In order to associate the death of public sector employees with HIV/AIDS, the consulting team analysed hospital records of employees from the five organisations who had died during the study period.

Personnel files of officers who exited the Public Sector between 1990-2000 constituted the main source of analysis for this report. Almost all files of those who left the service that were available in the Department of Human Resource Management and Development (DHRMD) and in the institutions' registries were examined.

In view of the importance of the study to the Government of Malawi and the donor community, a Steering Committee comprising the Department of Human Resource Management and Development (DHRMD), the United Nations Development Programme (UNDP), the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the NACP / NAC[6] was established to supervise the work of the consultant. The Steering Committee met the consultant on a weekly basis to receive progress reports. In addition, the services of an international consultant were obtained to provide direction and add an international perspective to the report.

Involvement of key stakeholders in the conceptualisation and execution of the study was seen as critical to facilitate the acceptance of the study results and ensure the implementation of the recommendations. The consultants regularly met senior officers responsible for human resource sections of the various Ministries.

[6] In July 2001, the NACP was replaced by the National AIDS Commission (NAC), which has 19 appointed Commissioners.

Research assumptions

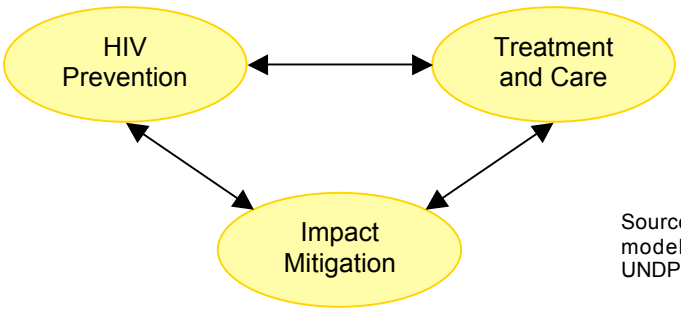
The study is informed by various assumptions, which may have influenced conclusions and recommendations formulated in this report.

Firstly, it was assumed that interviewed officers (people interviewed/consulted) would be fairly knowledgeable about HIV/AIDS causes, transmission mode and symptoms. As a consequence, they would be able to give an informed response during discussions and interviews and suggest appropriate workplace practices to prevent HIV/AIDS transmission.

Secondly, it was assumed that rates of overall adult mortality are a fairly accurate reflection of mortality rates among civil servants at all levels. Because mortality can only be linked to HIV/AIDS after a test with positive results, proxies based on established adult mortality trends have been used to determine HIV/AIDS-related deaths among civil servants.

Finally, it was assumed that deaths from certain causes or symptoms within the age group of 25-40 years were AIDS-related. This assumption is supported by NACP findings and further substantiated by a random survey of hospital records undertaken during the course of this study.[7]

Graph 4. Dimensions of an effective response to HIV/AIDS



Source: Based on the model presented in UNDP (2001), p. 5

[7] Medical personnel conducted an anonymous random survey of 396 medical records of deceased persons. The survey found that 94% of deaths were from HIV/AIDS related causes using the WHO criteria.

Study limitations

The main objective of the study was to establish mortality and morbidity trends in the Malawi Public Service, assess to what extent these are HIV/AIDS-related, and what the impacts are of these trends on the capacity of the Ministries surveyed. Thus, the study did not focus on other core components of an effective response to HIV/AIDS, such as prevention or treatment and care (See Graph 4). The purpose of the research was to focus on the third component: by assessing the impact on the organisation, strategies for impact mitigation could be developed.

The study encountered a number of specific problems that made it difficult to collect complete data on some issues. These included:

Poor record management

Records in the Public Service are not properly kept. Most of the records on human resources are manually done and are not properly kept in one place.

Poor record keeping

With the exception of the Malawi Police Service (MPS), Ministries do not maintain records on morbidity and absenteeism. Absenteeism in the Public Service is difficult to measure, because there is no clear working definition for absenteeism. The study found that there are two major types of absenteeism in the Public Service. The first is obvious absenteeism, where an officer does not report for duties for a day or more for genuine reasons, like sickness. The second type of absenteeism is more subtle, where employees absent themselves under the guise of illness or funeral attendance, or where they report for duties but they spend the whole day reading newspapers or playing games on the computer. Another example is where employees work for fewer hours than the official 8_ hours a day. Subtle absenteeism is very common in all government institutions, especially among junior officers. It is the most difficult type of absenteeism to measure and control, especially where people are physically present but are not working.

The lack of a system on absenteeism means that information on absenteeism is not recorded. These are issues that are simply observed and noted. This made it difficult to make meaningful observations based on an accurate reflection, especially of the age and gender profile of civil servants over time. In some cases, it was impossible to provide an analysis by gender and age group.

Similarly, there are no records on expenditure. While government officials acknowledged having spent money on funerals and illnesses, they were unable to show records related to this.

Furthermore, information on vacancies is scanty and limited. This state of affairs has affected not only the vacancy analysis but also the attrition analysis by specific characteristics.

Inconsistent records

During the study some inconsistencies in records were observed. For example, according to the estimates document for 2001-2002, the MOHP had 20,305 established posts of which 14,432 were filled. The *PPPA* from the Accountant General, however, indicated that the Ministry had 17,489 posts as of July 2000. Differentials were also noted on established posts for the MOAI between DHRMD and Ministry records.

Poor retrieval system

Some information that was available was difficult to access because of staff attitudes. Most of the people contacted did not see the importance of the study in relation to their performance.

Time constraints

The problems with record keeping in the Public Service added pressure on the time frame for the study.

Disagreement within the Steering Committee

While the weekly meetings with the Steering Committee were meant to guide and steer the study, at some point the Steering Committee reached an impasse. Disagreement arose about the ethics of using hospital records to determine HIV/AIDS as the likely cause of death. Eventually, this impasse was broken when it was decided that hospitals could be visited.

Conclusion

The problems encountered during the course of this study as noted above have complicated the collection and analysis of data. Some of these limitations will become obvious in the next section, which presents the research findings.

E. The Impact of HIV/AIDS on the Public Service of Malawi

HIV/AIDS impacts on all sectors of society. The Public Service is no exception. It is projected that HIV/AIDS-related illness and death will increase in the next five years. The erosion of human resources in the Public Service means that its capacity to develop an effective response to the HIV/AIDS epidemic within the context of a comprehensive development approach is severely jeopardised.

This section analyses the impact of HIV/AIDS on the Malawi Public Service by looking at selected Ministries. These include the Ministry of Education, Science and Technology (MoEST); the Ministry of Agriculture and Irrigation (MoAI); the Ministry of Health and Population (MoHP); the Malawi Police Service (MPS); and the Ministry of Water Development (MoWD). Together, they comprise over three quarters (79%) of all established posts in the Public Service of Malawi. A breakdown of established posts in these Ministries is presented in Table 3. This report presents these Ministries in the order of their size, starting with the biggest Ministry, the Ministry of Education, Science and Technology (MoEST). Before presenting the findings, however, some information regarding the human resource policy environment is needed to appreciate the extent to which these organisations are vulnerable to the impacts of HIV/AIDS.

Table 3. Established Posts in the Malawi Public Service, 2000

Ministry	MoEST	MoHP	MoAI	MPS	MoWD
Total staff establishment	61,912	25,894	7,878	6,110	981

The human resource policy environment and practices

The human resource policy environment has a bearing on the capacity of Public Sector organisations to effectively respond to the HIV/AIDS epidemic and mitigate its impact. As such, these are factors that influence their institutional vulnerability to HIV/AIDS. Key aspects of the human resource policy environment discussed here include: the legal framework on HIV/AIDS and HIV/AIDS workplace programmes; roles and responsibilities in relation to human resource policy development and implementation; specific human resource policies, such as recruitment, training, retirement, sick leave and absenteeism; information management; and, financial resources.

Legal provisions on HIV/AIDS and workplace programmes

Malawi does not have specific legislation on HIV/AIDS. However, the Constitution of Malawi (Government of Malawi, 1994) makes provision for the right to safe and fair labour practices, which includes the prevention of HIV transmission and the protection of employees. Additionally, the Health and Safety Act (Government of Malawi, 1997) and the Workers Compensation Act require employers to ensure that working environments are safe from occupational accidents and other harmful incidents. HIV contraction is included in these provisions. Thus, as an employer the government is obliged to put in place appropriate HIV/AIDS workplace programmes. Furthermore, as a signatory to the *HIV/AIDS at the Workplace Code of Conduct* of the Southern African Development Community (SADC), the Government of Malawi is obliged to ensure that there is no discrimination of employees on the basis of their HIV/AIDS status.

Currently, few Public Sector organisations have an HIV/AIDS workplace programme. The Ministry of Defence, the Ministry of Home Affairs (which includes the Malawi Police Service), the Ministry of Agriculture and Irrigation and the Ministry of Labour and Vocational Training have fairly elaborate programmes. Other Ministries, like the Ministry of Agriculture and Irrigation, the Ministry of Water Development, the Ministry of Commerce and Industry and the Ministry of Education, Science and Technology, have also made some notable progress in developing HIV/AIDS workplace programmes. It is the intention of the Government of Malawi that all Ministries should have HIV/AIDS workplace programmes in order to curtail the spread of the epidemic in the public sector. The National AIDS Commission (NAC) has already trained all Ministries on HIV/AIDS mainstreaming and has provided support in the development of workplace programmes. Such a programme can play an important role in reducing institutional vulnerability to HIV/AIDS.

Policy making and policy implementation

Human resource policy development in the Public Service is the responsibility of the Department of Human Resource Management and Development (DHRMD) in the Office of President and Cabinet (OPC). Ministries and line departments are responsible for the implementation and management of such policies. Ministries can, however, make their own operational human resource policies based on the core policies that are universally applicable to the entire service. This system ensures standardisation of practice in the entire service. At

the same time, the centralised system can make these organisations more vulnerable to HIV/AIDS, as the lack of a mandate to change universal policies hinders Public Sector organisations to respond effectively to the specific impacts of HIV/AIDS related morbidity and mortality.

Specific human resource policies and their implementation

- Recruitment

The DHRMD is responsible for creating and controlling staff establishments for all Ministries and departments. Proposals for creating new posts must be approved by the Cabinet Committee on the Economy. The Ministry of Finance (Treasury) is responsible for issuing an establishment warrant, which is the authority for funding the posts. Recruitment, appointments, promotions and discipline for senior and mid-level managers between grades EO/TO to P5/S5 is done by the Civil Service Commission. The Appointments and Disciplinary Committee in each Ministry/Department has delegated powers from the Civil Service Commission to recruit for grades STA/SCO and below. In practice, the centralised recruitment system results in long delays in filling vacancies, sometimes taking up to six to 12 months. As a consequence, Public Sector organisations are particularly vulnerable to the effects of HIV/AIDS-related attrition.

- Training

All external training in the entire civil service is coordinated by the DHRMD. Before 1992, the Department received extensive donor support in the form of scholarships to train civil servants in various disciplines outside the country. After 1992, donor support for training dwindled and was only provided in the context of donor-funded projects. As a result, there are fewer opportunities for civil servants to receive training abroad in specialised areas. In addition, the Government of Malawi set up the Malawi Government Scholarship Fund (MGSF) to support training in areas that did not attract donor support. However, budgetary constraints facing the Government have led to a situation where the MGSF has insufficient resources to support all the training needs in the civil service. The lack of training support makes civil service organisations vulnerable to HIV/AIDS in the sense that it will not be easy to replace the lost capacity.

- Retirement

According to the Malawi Public Service Regulations (MPSR), a civil servant qualifies for retirement under the following conditions: ten years pensionable service and 55 years of age; ten years pensionable service and 45 years of age with Minister's consent; pensionable officer and 20 years service; medical grounds; public interest; redundancy; or, abolition of post or office.

The condition that is relevant to HIV/AIDS is retirement on medical grounds. In practice, this provision is rarely implemented because there are no mechanisms for monitoring illness in the Public Service. This state of affairs renders those organisations that are highly affected by HIV/AIDS-related morbidity vulnerable, especially where there are various cases of prolonged illnesses in critical positions.

- Absenteeism

According to the MPSR, a civil servant is guilty of misconduct when s/he absents herself/himself from her/his post during normal working hours without permission from a responsible officer or controlling officer, or without a valid excuse. If the period exceeds five consecutive days, it amounts to abscondment and results in dismissal. However, this regulation is defeated in practice, as some officers do not have line supervisors. Also, there is currently no system in place for monitoring and recording absenteeism.

- Sick leave

According to the MPSR, an employee is entitled to three months sick leave with full pay, after which s/he is entitled to another three months sick leave with half pay. After six months, the individual is entitled to another six months sick leave without pay. A medical report has to be issued for someone to be granted sick leave. Yet, implementation of the sick leave policy has been problematic. On humanitarian grounds, officers often continue to be paid for as long as they are in post. Non-implementation of the sick leave policy has significant financial implications, which enhances the institutional vulnerability to HIV/AIDS, especially when these costs have not been taken into account in the planning process.

- Retention and remuneration

Currently, the Malawi Public Service does not have a deliberate policy to retain qualified staff, especially those with rare skills and valuable experience. Currently, the service is operating two parallel remuneration systems that are bound to encourage high attrition rates among highly qualified and skilled staff. The performance-based remuneration system for senior officers offers highly competitive salaries, whereas the salaries of most civil servants are based on the normal government salary structure.

Information management systems

Sound information management systems are critical for organisational effectiveness and institutional memory. The current information storage and retrieval system in Government is manual, except for information relating to salaries. As a consequence, information is difficult to retrieve and sometimes gets lost. In addition, information exchange is hampered by the absence of electronic networking and teleconferencing facilities. Instead, current information exchange procedures centre on formal management meetings and ad hoc requests for information. There is also a lack of incentives for the documentation and dissemination of information. This is exacerbated by the bureaucratic and hierarchical structure in the Public Service, which also serves to hamper the easy flow of information.

Inadequate financial resources

The multiple impacts of HIV/AIDS-related morbidity and mortality in the Public Service have significant financial ramifications. Currently, the Service is operating on a cash budget system, whereby organisations are provided with resources on a monthly basis to implement the activities for that particular month. In most cases, the financial resources provided are below the requirements. The lack of financial stability increases the vulnerability of government organisations to HIV/AIDS, especially since there are no budget items for expenses stemming from HIV/AIDS-related morbidity and mortality.

1. MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY (MOEST)

Introduction

The Ministry of Education, Science and Technology (MoEST) is responsible for all formal education in Malawi. Its mission is to provide quality education for the livelihood of all Malawian children through improved access, quality and equity, strengthened components and support institutions. Its strategic plans and objectives include:

- Improvement of access, quality and equity in primary, secondary and tertiary education;
- Strengthening the science, technical and vocational and commercial components of the school curriculum;
- Improving special education;
- Improving the performance of supporting educational institutions;
- Developing an effective and efficiently managed national educational system.

The MoEST reports that education is the centrepiece of poverty reduction and that increased investment in education yields broad economic and social benefits, increased agricultural productivity, higher incomes, lower fertility rates and improved nutrition.

Methodological considerations

This study reviewed and analysed 6,505 records of staff that left the Ministry between 1990 and 2000 for various reasons. Of those, 5,188 were fairly complete and processed. This means that 20% of records were incomplete. In addition, 766 records on Temporary Teachers (TTs) from three out of the six Education Divisions[8] were also reviewed. These have been analysed separately so as not to distort the picture. However, most of the data on TTs was incomplete. For example, out of 766 TT records reviewed, 10 (1.3%) lacked information about sex and 279 (36%) lacked details about age.

Because all records are done manually, the study found that updating information in files was slow and tracking files was difficult. Furthermore, information on vacancies was not up-to-date and incidences of absenteeism are not recorded.

[8] The six Education divisions are Northern, Central Eastern, Central Western, South Eastern, South Western and Shire Highlands.

Attrition

This section looks at attrition levels in the MoEST. After examining general attrition levels, it will look more closely at attrition levels according to sex and age and according to occupational category, with a specific focus on death-related attrition.

General attrition levels

Attrition levels and causes for qualified teachers and support staff are reflected in Table 4. Table 5 reflects the findings for TTs. Table 4 does not include data regarding resignations. As a result, the analysis here will be slightly distorted. As Table 4 shows, general attrition among qualified teachers and support staff has increased significantly by 2000 compared to 1990. The trend over time is quite mixed, though. General attrition levels peaked in 1993, largely because of a disproportionately high number of retirements. Between 1994 and 1998, general attrition continues to increase, with a drop in 1996. After 1998, a slight downward trend seems to set in. This apparent decline could be due to poor record keeping, slow update and movement of files to the Ministry's headquarters, or decentralisation of management of education facilities to divisions since the late 1990s.

Table 4. General Attrition by Cause and Year for Qualified Teachers and Support Staff (5,188 records)

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	%
Death	12	69	163	230	223	244	207	222	325	351	289	**2,335**	***45***
Dismissal	10	13	8	3	4	4	3	3	3	7	0	**58**	***1.1***
Redundancy	8	79	2	12	3	8	1	0	1	0	0	**114**	***2.2***
Retirement	4	13	46	957	211	212	168	228	332	292	218	**2,681**	***51.7***
Total	**34**	**174**	**219**	**1,202**	**441**	**468**	**379**	**453**	**661**	**650**	**507**	**5,188**	***100***
Total staff in post**	18,195	19,330	24,944	27,801	43,740	33,771	34,821	23,796	29,665	34,990 *	34,222	**325,275**	**-**
Attrition rate	***0.2%***	***0.9%***	***0.8%***	***4.3%***	***1%***	***1.4%***	***1.1%***	***1.9%***	***2.2%***	***1.6%***	***1.5%***	***1.6%***	**-**

* Estimated

** Excludes Temporary Teachers (TTs)

Source for number of staff in post: Education Statistics Annual Reports, MoEST Planning Department, 1990 - 2000.

As Table 4 shows, retirement and death are the main causes of attrition, accounting for 52% and 45% of the total respectively. In most cases of retirement, staff had attained the age of 55 years or had served for 20 years as stipulated in the regulations. However, an analysis of records of primary school teachers, who left the service between 1997 and 2000, shows that premature retirements, mostly on medical grounds, accounted for 1.7% of the annual attrition.

Table 5. General Attrition by Cause and Year for Temporary Teachers (766 records)

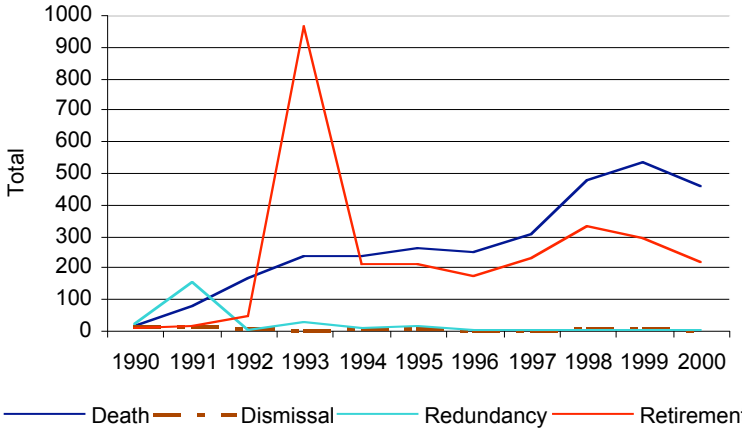
Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	*% of total*
Death	3	7	1	2	10	17	39	80	147	180	164	**650**	***84.8***
Dismissal	1								1	1	2	**5**	***0.6***
Redundancy	8	71	1	12	1	3	1		1			**98**	***12.8***
Resignation											1	**1**	***0.1***
Retirement	1	2		4				1		2		**10**	***1.3***
Other							1		1			**2**	***0.2***
Total	**13**	**80**	**2**	**18**	**11**	**20**	**41**	**81**	**150**	**183**	**167**	**766**	***99.8***
Total TTs in post	4,013	5,731	3,261	3,423	4,505	19,229	16,262	23,017	20,647	21,283	28,012	**149,383**	**-**
Attrition rate	***0.3%***	***1.4%***	***0.1%***	***0.5%***	***0.2%***	***0.1%***	***0.3%***	***0.4%***	***0.7%***	***0.9%***	***0.6%***	***0.5%***	**-**

Source for number of staff in post: Education Statistics Annual Reports, MOEST Planning Department, 1990

General attrition among Temporary Teachers has gradually increased throughout the decade, except for a significant drop in 1992 (see Table 5). Between 1995 and 1999, attrition numbers shot up significantly. Death is the main cause of attrition among Temporary Teachers, accounting for 85%-98% of total attrition between 1995 and 2000. It is important to note that this group mainly comprises young Malawians below the age of 50. As with qualified teachers and support staff, attrition from redundancies and dismissals are almost negligible.

Graph 5 shows attrition trends by cause in the MoEST, combining the data of tables 4 and 5. The graph shows a sharp increase in deaths between 1990 and 1993. Until 1996, deaths remain fairly constant at around 230-260 cases per annum, after which a sharp increase is

Graph 5. Attrition by Cause and Year in MOEST



visible. The drop in 2000 is mainly due to incomplete records obtained for that year. Retirements have also increased over time. Retirements were particularly high in 1993, when the Government enforced the mandatory retirement age. The graph further indicates

negligible levels of redundancies (with the exception of 1991) and dismissal during the period under review.

Table 6. General Attrition by Sex and Age Group in MoEST (4,935 records*)

	20-24		25-29		30-34		35-39		40-44		45-49		50+		Total	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Total	16	11	176	151	232	404	186	385	151	332	217	344	562	1,768	1,540	3,395
*%***	*1%*	*0.3%*	*11.4%*	*4%*	*15%*	*11.9%*	*12%*	*11%*	*9.8%*	*9.8%*	*14%*	*10%*	*36.5%*	*52%*	*31%*	*69%*
Total	**27**		**327**		**636**		**571**		**483**		**561**		**2,330**		**4,935**	
% of total	***0.5%***		***6.6%***		***12.9%***		***11.6%***		***10%***		***11.4%***		***47%***		***100%***	

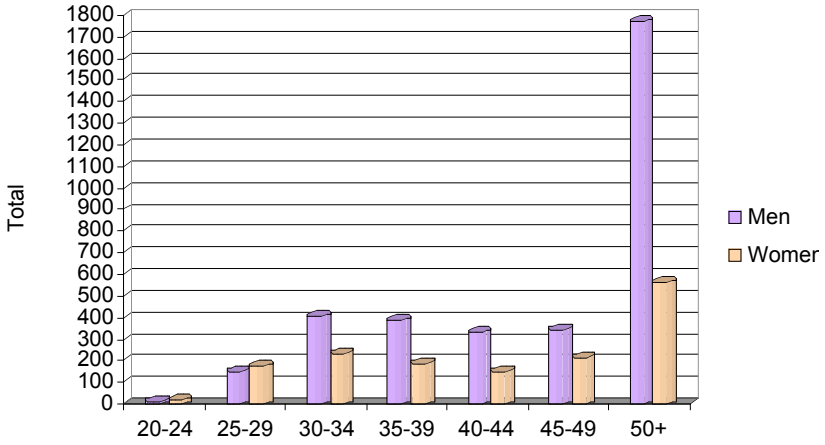
f = female, m = male
*Excludes all records (253) where sex was not indicated. Also excludes Temporary Teachers.
** Calculated as a ratio of the total per sex. Thus, 16 cases among women between 20-24 is 1% of total deaths among women.

Attrition by sex and age group

Table 6 shows the number of men and women who left the MoEST during the period under review and their age group at the time of exit. The rates indicate the percentage of men and women in a particular age group as a proportion of the total number of men and women respectively that left the service. More revealing rates, based on employees in post, could not be calculated due to lack of gender and age disaggregated data.

Table 6 reveals that the highest number of employees (47%) who exited the MoEST had reached the age of 50 and beyond, followed by people between 30-34 years old (24.9%), 35-39 years old (11.6%) and 45-49 years old (11.4%). It can be inferred that the departure of the majority of those in the age category 50+ was due to retirement, while death is likely to have been the main cause for the loss of those between the ages of 30-49 years old. Table 7 confirms this conclusion (see below).

Graph 6. Attrition by Sex and Age Group in MOEST



Graph 6 further illustrates the trends recorded in Table 6. It shows a higher attrition of female workers in the age groups 20-29, while male attrition exceeds female attrition from age 30 upwards.

As Table 5 highlighted, death is a major cause of attrition in the MoEST. Table 7 further analyses death-related attrition by age and sex in order to establish which groups are mostly affected by death. It shows that women are generally dying at a younger age than men. Whilst most female workers who have died were between 25-39 years old, most male workers who have died were between 30-44 years old. In both cases, this indicates death of young adults during their most productive years. These findings correlate with the findings of other studies and NACP statistics of HIV/AIDS-related deaths among the general population in Malawi.

Table 7. Death-related Attrition by Sex and Age Group in MoEST (2,196 records*)

	20-24		25-29		30-34		35-39		40-44		45-49		50+		Total	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Total	**14**	**7**	**168**	**140**	**223**	**382**	**162**	**336**	**87**	**229**	**69**	**143**	**55**	**181**	**778**	**1,418**
*%***	*1.8%*	*0.6%*	*21.6%*	*9.9%*	*28.7%*	*26.9%*	*20.8%*	*23.7%*	*11.2%*	*16.1%*	*8.9%*	*10.1%*	*7.1%*	*12.8%*	*35.4%*	*64.6%*
Total	**21**		**308**		**605**		**498**		**316**		**212**		**236**		**2,196**	
% of total	***1%***		***14%***		***27.5%***		***22.7%***		***14.4%***		***9.7%***		***10.7%***		***100%***	

f = female, m = male
*Excludes all records (139) where data had missing variables.
** See Table 6.

Attrition by occupational category

Table 8 shows death-related attrition rates of primary and secondary school teachers in selected years. Complete death rates for 1990 to 1999 are in Appendix 1. As Table 8 shows, higher death rates are reported among secondary school teachers in 1992 (7.9) and 1996 (6.4) compared to primary school teachers. In 1998 and 1999, the death rate is higher among primary school teachers. It is worth noting that the death rates experienced by both categories are below the average national death rate of 11.2% (DHS, 2000).

Table 8. Death-Related Attrition by Occupational Category in MoEST for Selected Years

	1992			1996			1998			1999		
Occupation*	**In post**	**Dead**	**Rate/ 1000**	**In post**	**Dead**	**Rate/ 1000**	**In post**	**Dead**	**Rate/ 1000**	**In post**	**Dead**	**Rate/ 1000**
Primary School Teachers	23,294	138	5.9	49,138	167	3.4	41,634	290	7	45,812	312	6.8
Secondary School Teachers	1,141	9	7.9	2,948	19	6.4	4,604	14	3	3,985	21	5.3

* Deaths for other staff categories could not be calculated due to lack of relevant data on number of staff in post. Also excludes TTs, all records (526) that had occupational category or attrition cause not indicated and other incomplete records (311).

Due to variations in death rates over the years, as indicated in Appendix 1, Standardised Mortality Ratios (SMR) are used to determine which occupational category is most affected

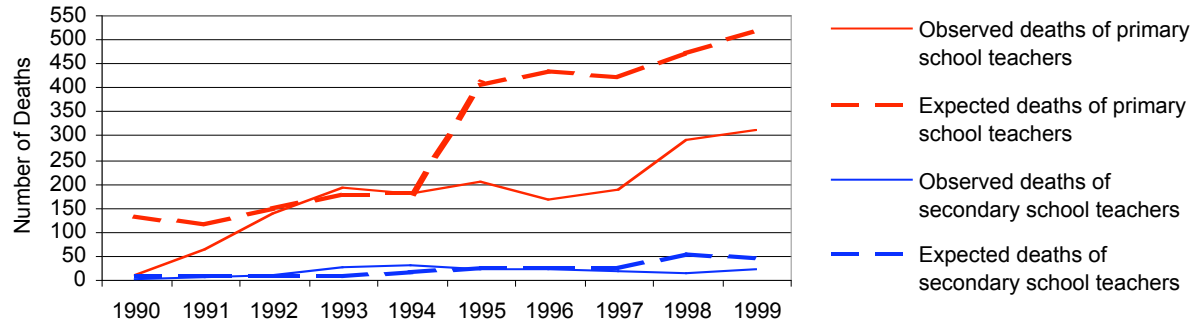
in the 10 year period. As Table 9 shows, the average SMR of both primary and secondary school teachers is below 100, an indication that both categories are experiencing less than average mortality compared to the general population. However, more deaths are experienced among secondary school teachers compared to primary school teachers. One possible explanation for this discrepancy could lie in the fact that most secondary school teachers are located in urban and peri-urban areas, where HIV prevalence rates are higher than in rural areas, where the majority of primary school teachers are based.

Table 9. Standardised Mortality Ratios for MoEST Staff

Occupational Category	Expected Deaths	Observed Deaths	SMR
Primary school teachers	3,921	1,739	43
Secondary school teachers	271	158	59

Graph 7 further illustrates the discrepancy between expected and observed deaths among primary and secondary school teachers. The graph shows higher expected than actual deaths throughout the decade, except in 1993 when actual deaths among secondary school teachers exceeded the number of expected deaths.

Graph 7. Observed and Expected Deaths of Primary and Secondary School Teachers



HIV/AIDS-related mortality

Although the SMR values in Table 9 and the trends reflected in Graph 6 indicate below average mortality among teachers, it would be erroneous to conclude that HIV/AIDS has not affected the MOEST, since there is no sector in Malawi that has been unaffected. In the absence of reliable clinical data on the HIV-status of the deceased, excess mortality and the age distribution of deaths are taken as proxy indicators of HIV/AIDS. According to the 2000 DHS and the World Bank (1998) study on the impact of HIV/AIDS in Malawi, the major explanation for excess mortality and premature deaths is HIV/AIDS. Table 7 indicates that

1,960 deaths (i.e. 89% of total deaths) occurred among employees in the age group 20-49 years old. This is the age group most affected by HIV/AIDS mortality.

Table 10. Estimation of HIV/AIDS-Related Deaths in MoEST

Year	NACP % of AIDS cases among professionals	Total Deaths	Possible AIDS cases
1995	11.8%	261	31
1996	9%	246	22
1997	9.7%	302	29
1998	9.6%	472	45
1999	9.6%	531	51
2000	9.6%	453	43
Total	***9.8%***	**2,265**	**221**

Table 10 calculates the number of possible AIDS cases in the Ministry between 1995 and 2000 (including TTs), based on NACP estimates of HIV/AIDS-related deaths among professionals. Because percentages for 1999 and 2000 were not available, it has been assumed that the 1998 ratio has remained constant. According to Table 10, almost 10% of death cases between 1995 and 2000 could be HIV/AIDS-related, amounting to 221 cases. When applied to the total number of deaths in the MoEST between 1990-2000 (i.e. 2,985), 293 deaths could be considered HIV/AIDS-related. However, given the age profile of deaths presented in Table 7, this is likely to be an underestimation.

Morbidity and absenteeism

The study could not establish morbidity levels in the Ministry because no records were kept on morbidity. Yet, it was widely reported that there is increasing morbidity in the Ministry, often considered to be HIV/AIDS-related, that leads to increased absenteeism. Managers of schools and departments said that it was common for a school to have at least one sick staff member, in varying degrees of seriousness, at any one time. With over 3,000 institutions and schools, it can therefore be estimated that at any one time there would be no less than 3,000 sick employees in the MoEST, who are likely to be absent either part-day or a full day.

Despite the assertion from managers that HIV/AIDS-related illnesses were contributing significantly to absenteeism, the study found that the Ministry has no system for recording absenteeism. A similar finding was noted in the study by Kadzamira et al (2001). It was therefore not possible in this study to quantify the levels of absenteeism. Even in qualitative terms, the issue was difficult to address, largely because there tended to be differences in understanding and defining absenteeism. Incidences of staff being "temporarily out" – with or without explanation or permission – were excluded from absenteeism. It was also found

that part-day absenteeism is often not regarded as absenteeism. Yet, these were reported to be quite common and have significantly increased in the last few years.

Causes of absenteeism were several, ranging from personal sickness, sickness in the family, funeral attendance to running personal errands, of which money hunting was cited as the most common errand. Absenteeism due to sickness of other family members was reported to be common among female employees. This clearly is a reflection of the dominant culture in Malawi, which views women as primary caretakers of the sick. Low morale was also cited and it was reported that a spirit of "work as you earn" seems to be taking root among most employees. Other reasons mentioned include lack of basic and essential work materials, tools and services.

In the absence of data on absenteeism, and more specifically absenteeism caused by HIV/AIDS-related illnesses, HIV/AIDS-related absenteeism is calculated on the basis of projections of AIDSCAP. According to AIDSCAP, HIV-infected employees are likely to be absent from work for at least 15 days per year, while those with full-blown AIDS will be absent for 65 days. In the case of those 293 employees whose death is considered to be HIV/AIDS-related, this translates into 19,045 days, which amounts to 866 months (calculated on 22 working days) for the whole period under review. Given the fluctuating HIV prevalence rate during the decade under review, it is not possible to use the current prevalence rate in assessing the total number of staff who are likely to have been infected with HIV during the whole period. A more accurate assessment can be made if we look at one specific year. As Table 10 shows, in 2000 43 deaths are likely to be HIV/AIDS-related. Thus, in 1999 these employees are estimated to have been absent for 2,795 days, or 127 months. If we accept that about 16% of all employees are likely to be HIV-positive, based on national HIV prevalence rates, it could be argued that in 2000 alone 9,957 staff members in the MoEST (including TTs) are likely to be infected with HIV. Excluding the 43 deaths that are likely to be HIV/AIDS-related, this means that these staff members would have been absent for 148,710 days, or 6,760 months, in 2000 alone.[9] This calculation does not include absenteeism caused by HIV/AIDS-related illness among family members, amongst others.

[9] The total number of staff in the MOEST in 2000 is 62,234. Based on the national prevalence rate of 16%, 9,957 staff is estimated to be HIV-positive.

Absenteeism of teachers means either cancellation of classes, combining two classes into one, or assignment of periods or classes to another teacher who may not be conversant with the subject. In the long run, all these have negative effects on the quality of education and the performance of the education system as a whole. Although not an explicit focus of this study, it should be noted that absenteeism and morbidity among school pupils was also reported to be on the increase. Pupil absenteeism is an issue of concern as it impedes the teaching process and the pace of implementation of syllabi.

Vacancy analysis

The study found that for a number of years, the MoEST had more teachers than authorised establishments (see Table 11). However, qualitative information from the Ministry revealed the existence of severe staffing shortfalls that seem to contradict these findings. A possible explanation is that there has been an expansion of educational facilities without a corresponding expansion of the staff establishment, since functional reviews are usually done after five years. The discrepancy between the quantitative and qualitative data therefore raises questions about the reliability of the data presented in Table 11, considering that records are updated manually.

Table 11. Vacancy Levels for MoEST Teachers, 1990-1999

	Primary School Teachers			Secondary School Teachers		
	Authorised	*Filled*	*Vacancy*	*Authorised*	*Filled*	*Vacancy*
1990	20,336	20,580	-244	1,074	1,096	-22
1991	20,336	17,942	2,394	1,074	1,095	-21
1992	20,336	23,294	-2,958	1,074	1,141	-67
1993	36,610	26,333	10,277	1,412	1,212	200
1994	48,864	27,948	20,916	1,412	2,672	-1,260
1995	48,864	45,775	3,089	1,396	2,713	-1,317
1996	48,864	49,138	-274	1,396	2,948	-1,552
1997	48,864	47,370	1,494	1,396	2,925	-1,529
1998	48,864	41,634	7,230	1,396	4,604	-3,208
1999	48,830	45,812	3,018	6,178	3,985	2,193

Source: MOEST Basic Statistics Reports, 1990-99 and GOM Schedule of Authorised Establishment Documents, 1990-2000

For this reason, a separate analysis of more current data of 2000/2001 has been undertaken in Table 12. What can be observed from the 2000-2001 data is the fact that the MoEST is operating with very high vacancy levels of 52% among primary school teachers and 77% among secondary school teachers. The average vacancy rate of almost 60% in the MoEST is clearly a matter of concern. Considering that the MoEST is experiencing below average death

rates, it can be inferred that death is not the major cause of vacancies. Rather, the discrepancy between the demand and supply of teachers, largely caused by the very low output from teacher training colleges, serves to explain the high vacancy rate.

Table 12. MoEST Vacancy Analysis for 2000-2001

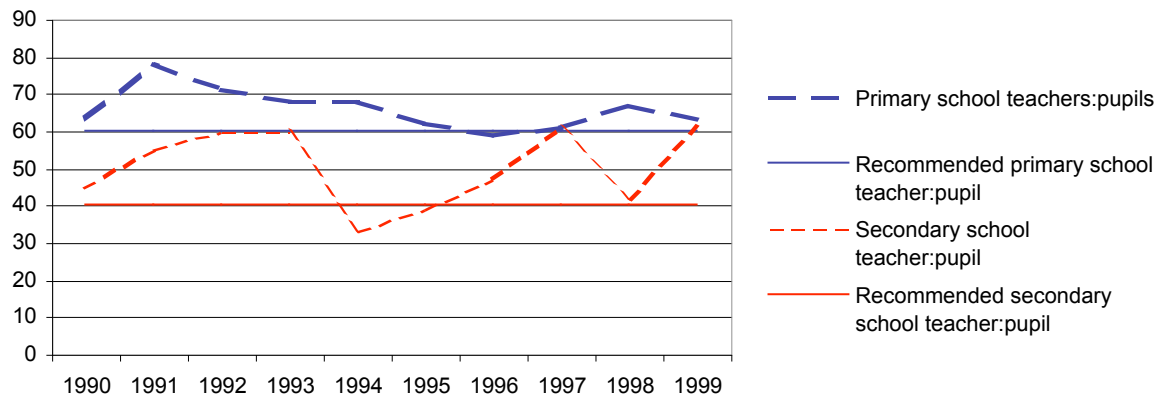
	Establishment	No of posts filled	Vacancy Level	Vacancy %
Primary school teachers (qualified)	61,144	29,554	31,590	*51.7%*
Secondary school teachers	5,754	1,314	4,440	*77.2%*
Temporary teachers (Primary)	74,378	28,012	46,366	*62.3%*
All other cadres	7,480	3,354	4,126	*55.2%*
Total MOEST	**148,756**	**62,234**	**86,522**	***58.2%***

Source: MOEST Human Resource Dept 2000-01 Staffing Report

Workload analysis

To analyse the workload in the Ministry, teacher : pupil ratios were used. However, as will be seen later, this measure needs to be used and interpreted with care. Graph 7 shows the trend in workload for MoEST teachers between 1990-2000 (See Appendix 2 for more detailed calculations). The average primary school teacher : pupil ratio for the period under review is 66. This is higher than the recommended ratio of 60. Similarly, the average secondary school teacher : pupil ratio of 50 is higher than the recommended ratio of 40.[10] This signifies high workloads among teachers. However, the picture is distorted because it reflects "upgraded" teachers (those with primary school teaching qualifications working in secondary schools or Community Day Secondary Schools) as secondary teachers.

Graph 8. Trends of Teacher Workload



[10] There is no clearly stipulated teacher : pupil ratio for secondary schools. In discussions with Secondary School Teachers and Secondary Advisors, 35-40 was the stated range.

As Graph 8 shows, higher, than average primary school teacher : pupil ratios were noted throughout the whole period, with the exception of 1996. Similarly, secondary school teacher : pupil ratios only stayed below the recommended ratio in 1994 and 1995. This could have been due to the influx of Temporary Teachers in 1994, which may have steered some senior primary school teachers to secondary schools.

Although some rural–urban differentials were noted, an examination of a few urban and rural schools shows little variety. For example, the ratio at Lilongwe Girls Secondary School was 1:19, at Soche Hill Secondary School 1:23, at Chilumba Secondary School 1:29, and at Kasungu Secondary School it was 1:43. Despite these ratios, nearly all secondary school teachers interviewed expressed high workloads in terms of the number of hours or periods covered. This suggests that workload cannot only be analysed by looking at teacher : pupil ratios. Other aspects, like hours of teaching, also need to be taken into account.

Summary

The findings so far suggest that HIV/AIDS increases death-related attrition and absenteeism in the Ministry. However, although the Ministry has high vacancy rates, these cannot be attributed solely to HIV/AIDS. Human resource planning and development in the Ministry is also a significant factor. The remainder of this section will discuss the third-level impacts of HIV/AIDS, as presented in Graph 3: a decline in productivity and performance, significant financial implications of various kinds, and negative impacts on service delivery.

Impact on productivity and performance

Productivity in the teaching service is defined in terms of the number of hours that a teacher spends in class and the quality of teaching and supervision that s/he provides to pupils and students, which impacts on their performance. As such, absenteeism, ill health and insufficient physical fitness to cope with the task of teaching are factors that undermine the productivity of a teacher. In the absence of reliable data on the number of hours lost due to absenteeism, it is difficult to calculate the loss of productive time. However, it is likely to be considerable given the scale of the current HIV/AIDS epidemic in Malawi.

Reduced productivity also emanates from HIV/AIDS deaths, which leads to a loss of qualified and, often, experienced staff, and increases the workload of remaining staff members. Discussions with school managers and teachers revealed that increased workload

without compensatory remuneration often results in frustration, low morale and low productivity.

Funeral attendance also leads to loss of productive time. Absenteeism to attend the funeral of a colleague in the Ministry or a family member can last anything between a few hours to several days. The extended family system and the style of living in closely knit societies means that one's network of relatives and "colleagues" is wide. Often, staff members do not only attend funerals of immediate colleagues, but also get involved with funerals of staff from other Ministries and organisations, in addition to those in the community and in their home villages.

Financial implications

The financial implications of HIV/AIDS-related morbidity and mortality are discussed in terms of replacement costs (i.e. training and recruitment), the cost of absenteeism and funeral costs. In addition to these costs, the Ministry also provides transport to officers who are ill to seek medical care from facilities of their choice, and to employees who visit their sick colleagues. Several Managers said that more of the Ministry's resources and staff time are allocated towards enabling staff to visit sick colleagues.

Training and recruitment

The Ministry does not keep records of recruitment costs to replace lost staff. The training costs reflected here represent the amount of money that the Ministry would spend to replace the teachers who have died (see Table 13).

Table 13. Training Cost of the Replacement of Dead Teachers in the MOEST

Occupation	Duration	Number of Replacements	Unit Cost of Training	Total Cost of Training	Total Cost in US$*
Primary school teachers	2 years	158	MK 300,000	MK 47,400,000	697,059
Secondary school teachers	4 years	1,739	MK 720,000	MK 1,252,080,000	18,412,941
Total		1,897		MK 1,299,480,000	19,110,000

* The conversion rate used is US$ 1 = MK 68.

If 9.8% of deaths among MoEST staff is likely to be HIV/AIDS-related (see Table 10), it is possible to calculate the replacement costs of teachers who are likely to have died of HIV/AIDS-related illnesses. Thus, it is estimated that it would require MK 4,645,201 (US$

68,312) and MK 122,703,838 (US$ 1,804,468) to replace HIV/AIDS-related deaths among primary school teachers and secondary school teachers respectively. This means that the opportunity cost of HIV/AIDS in MoEST in the period under review amounts to MK 127,349,039 (US$ 1,872,780).

Cost of absenteeism

The cost of absenteeism can be estimated by looking at the estimated number of months of absenteeism resulting from HIV/AIDS-related morbidity. As estimated previously, in 2000 alone HIV/AIDS-related deaths in the MoEST may have been preceded by 127 months of absenteeism. Another 6,760 months may have been lost due to HIV/AIDS-related illness. Based on an average monthly salary of MK 3,000, it can therefore be estimated that the cost of absenteeism due to HIV/AIDS in 2000 alone may have cost the MoEST MK 20,661,000.

Funeral costs

The Ministry does not keep records of expenditure on funerals. Discussions with Ministry officials revealed that funeral costs include the cost of a coffin, wreaths, transportation and subsistence allowances for staff on duty. It was mentioned that funeral costs vary according to the amount of money the Department has and the seniority of the deceased officer. However, these costs are neither documented nor monitored. It was stated that funerals of senior officers tended to be more costly than those of junior officers. Based on available data, it was estimated that funeral costs for most teachers and lower to middle management staff fall between MK 12,000 and MK 30,000 per funeral. Transportation costs, determined by the distance to be covered, largely accounted for the difference.

Impact on service provision

This study has established high vacancy rates among both primary and secondary school teachers. Not only does this imply that teachers will be thinly spread, but also that the quality of services will be compromised. The study found that absenteeism of teachers often led to cancellation of classes, combining two classes into one, or assignments of periods or classes to another teacher, who may not be qualified to teach the subject. In many instances, mathematics and sciences were given as examples of subjects taught by unqualified teachers, because of a shortage of teachers specialised in these subjects. It was stated that this state of affairs compromises the quality of education provided and the performance of the education sector as a whole.

In addition, in responding to the problem of high vacancy rates the MoEST often meets staff shortfalls by using lower cadres. For instance, numerous primary school teachers are teaching in secondary schools. Similarly, Community Day Secondary Schools and other higher learning institutions often use teachers who do not have the relevant basic qualifications. In these circumstances, maintaining quality education is difficult.

Institutional vulnerability to HIV/AIDS

Whereas various factors determine institutional vulnerability to HIV/AIDS, this section focuses on the existence of workplace interventions on HIV/AIDS as a strategy that can reduce institutional vulnerability.

Workplace interventions on HIV/AIDS

Despite legal provisions on HIV/AIDS and awareness of the need for HIV/AIDS workplace measures, the Ministry has no formal policy on HIV/AIDS. However, with the support of various organisations such as UNICEF, UNAIDS, the EU and other donors, as well as on their own initiative, several schools were reported to have started anti-AIDS Clubs. These Clubs serve as a forum for the prevention of further transmission of HIV, information exchange and a tool for supporting those affected by and/or living with HIV/AIDS. However, with the exception of a few, most anti-AIDS Clubs are targeted at students. Therefore, there are no distinct programmes targeting teachers and other MoEST employees. There is clearly a need to develop appropriate workplace interventions targeting MoEST employees.

Conclusion

The HIV/AIDS epidemic poses serious social, health and economic challenges to the Ministry of Education, Science and Technology (MoEST). These include loss of productive and qualified personnel, reduced productivity from increased absenteeism and low morale, and increased medical and funeral costs. Although the findings suggest lower than average deaths among both primary and secondary school teachers, it cannot be ruled out that HIV/AIDS has contributed to these deaths, especially because most deaths occurred among those between 20-49 years old. Whilst death is not the main determinant of vacancies in the Ministry, the existence of high vacancy levels makes the Ministry particularly vulnerable to the impacts of HIV/AIDS morbidity and mortality. The findings have shown that high incidences of absenteeism and high workloads are undermining the capacity of the Ministry

to perform effectively. The large amounts of financial resources that are eroded as a result of increased morbidity and mortality levels means that resources are diverted from more productive uses. As a consequence, the overall productivity of the MoEST and its capacity to provide quality educational services are further undermined. The epidemic also affects student enrolments and school attendance. Overall, improvements and gains in the education sector made over the last two to three decades are likely to be eroded by the devastating progression of the epidemic.

2. MINISTRY OF AGRICULTURE AND IRRIGATION (MOAI)

Introduction

The mission of the Ministry of Agriculture and Irrigation (MoAI) is to accelerate broad-based agricultural and rural development as a major element of fighting poverty through: i) improving food self-sufficiency and nutritional status of the population; ii) expanding and diversifying agricultural and livestock product exports; and, iii) raising farm incomes and promoting economic growth while conserving natural resources.

To achieve its mission, the Ministry provides policy guidance to the various stakeholders on crop and livestock production and marketing. It also promotes sustainable crop and livestock production through the generation and dissemination of improved technologies to farmers.

Agricultural Service Delivery

The agricultural sector in Malawi is divided into two sub-sectors: estates and smallholders. While the policies of the Ministry guides the operations of both sub-sectors, the delivery of agricultural services mainly targets smallholders.

Agricultural services are delivered to farmers in a decentralised manner through Agricultural Development Divisions (ADDs), which are headed by Programme Managers. Almost all departments at MoAI headquarters are replicated at ADD level. Each ADD is further divided into Rural Development Projects (RDPs), which are headed by Project Officers. Each RDP is divided into Extension Planning Areas (EPAs), which are further divided into sections. A Development Officer heads each EPA, while each section is supposed to be staffed by a Field Extension Assistant. It is the Field Extension Assistants, who demonstrate innovative agricultural technologies to smallholder farmers. Apart from the Field Extension Assistants, the Technical Assistants at ADD level include Veterinary Assistants, Farm-Home Assistants and Land Resources Conversation Assistants, among others. The Ministry is linked to farmers through Technical Assistants.

Attrition

This section presents the findings on the annual rate of attrition of employees from MoAI during the period between 1990 and 2000.

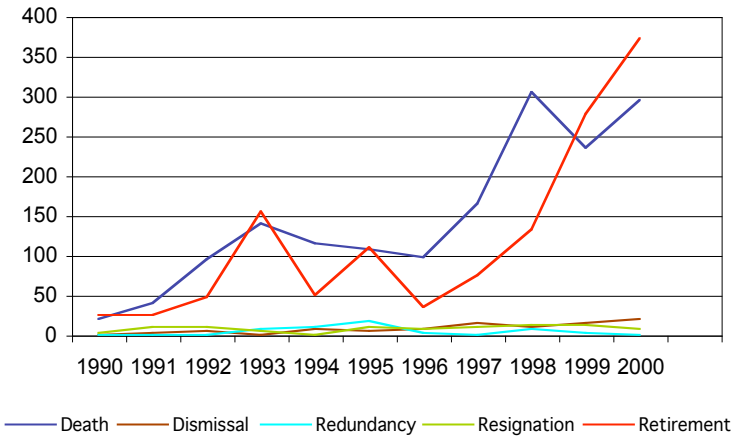
Table 14. General Attrition by Cause and Year for M0AI

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	%
Death	20	39	95	141	114	107	98	165	304	236	294	1,613	***51.3%***
Dismissal	1	2	6	1	8	5	8	16	10	15	20	92	***2.9%***
Redundancy	1	1	1	8	9	18	2	1	8	2	0	51	***1.6%***
Resignation	2	9	9	6	1	9	8	10	13	12	8	87	***2.8%***
Retirement	24	25	48	155	49	109	36	74	132	277	373	1,302	***41.4%***
Total	**48**	**75**	**159**	**311**	**181**	**248**	**152**	**266**	**467**	**542**	**695**	**3,145**	***100%***
Total Staff in Post	6,136	6,163	6,247	6,399	6,269	6,336	6,240	7,372	7,272	7,214	7,275	65,648	
Attrition rate	*0.8%*	*1.2%*	*2.5%*	*4.9%*	*2.9%*	*3.9%*	*2.4%*	*3.6%*	*6.4%*	*7.5%*	*9.6%*	*4.8%*	

General attrition levels

Between 1990 and 2000, 3145 employees left the Ministry (see Table 14). The table shows an increasing trend in overall attrition over the years, with death and retirement being the main causes of attrition. Graph 9 further visualises these trends. The figure shows a steady increase in deaths between 1990 and 1993, followed by a drop between 1994 and 1996 and another increase from thereafter until 1998. Almost throughout the decade, death was the main cause of attrition. In 1993, the retirement rate was higher because during this year the Government enforced the mandatory retirement age of 55 years. From 1999, retirements exceed deaths. To put it differently, in 1995, both death and retirement affected about 9 employees each month. However, in 2000 the number of deaths in the Ministry reached on average 25 each month, compared to 31 retirements.

Graph 9. Attrition by Cause and Year in MOAI



While the mandatory retirement age is 55, a closer analysis of retirements reveals that a substantial number of employees, especially professional officers and frontline extension workers, retired after attaining 40 years of age and working for at least 20 years. This is considered an acceptable condition for early retirement. An analysis of retirements among officers with Diplomas and other higher academic qualifications proved this point. Between 1990 and 2000, 64% of employees with higher qualifications who retired did so when they were between 40 and 49 years old after having served for 20-24 years. In addition, 7 (63%) out of 11 Research Scientists who left the

service in 2000 retired. Five out of seven had a PhD, one had a Masters Degree and one had a Bachelors Degree. It was confirmed that all of them had found other jobs inside and outside the country. Discussions with officials in the Ministry and field staff revealed that most Field Officers and Field Assistants retire early to join NGOs, which were said to have better remuneration packages. Low salaries are, therefore, a major cause of early retirement in the MoAI.

The Human Resource Management section in the Ministry also revealed that there have been incidences where some Field Assistants opted to retire when they were in dire need of financial resources. There is a provision in the MPSR that one can get retirement benefits 18 months prior to the actual retirement day. After getting these benefits, most officers applied to rejoin the service.

Although resignations and dismissals are on the low side, it is important to note that they are increasing slowly. The rate of growth of resignations may not be significant, but the finding that abscondment is the main cause of dismissal is worth noting. For example, out of 68 employees who were dismissed between 1996 and 2000, 44 (33 Technical Assistants and 11 professional officers, mainly from the Department of Agricultural Research) were dismissed because of abscondment. Discussions with officials in the Ministry revealed that most of them absconded and joined other organisations that offered a higher salary.

Table 15 shows attrition as a ratio of the number of employees in post during that particular year. A detailed table to support Table 15 can be found in Appendix 3.

Table 15. General Attrition as a Ratio of Staff in Post by Cause and Year for MoAI

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Death	0.3%	0.6%	1.5%	2.2%	1.8%	1.7%	1.6%	2.2%	4.2%	3.3%	4%
Dismissal	0.01%	0.03%	0.09%	0.01%	1.13%	0.08%	0.13%	0.22%	0.14%	0.2%	0.3%
Redundancy	0.01%	0.01%	0.01%	0.13%	0.14%	0.28%	0.03%	0.01%	0.1%	0.03%	0%
Resignation	0.03%	0.15%	0.14%	0.1%	0.01%	0.14%	0.13%	0.14%	0.2%	0.02%	0.12%
Retirement	0.04%	0.04%	0.8%	2.4%	0.8%	1.7%	0.6%	1%	1.8%	3.8%	5.1%
Total	**0.8%**	**1.2%**	**2.5%**	**4.9%**	**2.9%**	**3.9%**	**2.3%**	**3.3%**	**6.4%**	**7.5%**	**9.5%**

The outcome of the analysis of quantitative data concurs with the qualitative findings, according to which 36% of respondents noted retirement as the major cause of vacancies, another 36% said resignations and 28% suggested death as the major cause of vacancies.

Attrition by sex and age group

Table 16 shows the number of men and women who have left the Ministry according to age group and as a percentage of the total number of men and women who have left the MoAI. However, the table does not include 588 officers whose age and sex were not traced during the study. A significant number of women between the ages of 25-29 years old have exited the service, accounting for 22% of the total number of women who have left. Men start to exit from 30 years old, in ever-increasing numbers as they get older.

Table 16. General Attrition by Sex and Age Group in MoAI (2,547 records)

	20-24		25-29		30-34		35-39		40-44		45-49		50+		Total	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Total *	2	8	36	77	18	237	25	315	37	418	23	570	20	761	161	2,386
%	*1.2 %*	*0.33 %*	*22.4 %*	*3.2 %*	*11.2 %*	*9.9 %*	*15.5 %*	*13.1 %*	*23 %*	*17.4 %*	*14.3 %*	*23.8 %*	*12.4 %*	*31.8 %*	*6.3 %*	*93.7 %*
Total	**10**		**113**		**255**		**340**		**455**		**593**		**781**		**2,547**	
% of total	***0.4%***		***4.4%***		***10%***		***13.3%***		***17.9%***		***23.3%***		***30.7%***		***100%***	

f = female, m = male

*Excludes all records (588) where sex and age were not indicated

Table 17 presents mortality rates among women and men of different age groups in the MoAI. The table shows that the majority of men (72%) died between the ages of 30 to 49. Death among women occurred at a slightly earlier age: 74% of women who died were between 25 to 44 years old. These mortality trends correspond with the NACP/NAC statistics.

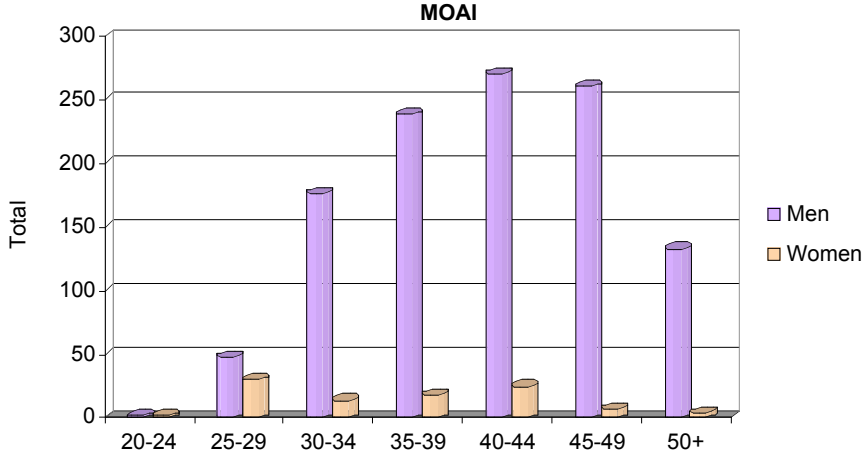
Table 17. Death-Related Attrition by Sex and Age Group in MoAI

	20-24		25-29		30-34		35-39		40-44		45-49		50+		Total	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Total	2	2	30	48	14	176	18	238	25	270	7	260	4	133	100	1,127
%	*2%*	*0.2 %*	*30 %*	*4.3 %*	*14 %*	*15.6 %*	*18 %*	*21.1 %*	*25 %*	*23.9 %*	*7%*	*23 %*	*4%*	*11.8 %*	*8.1 %*	*91.9 %*
Total	**4**		**78**		**190**		**256**		**295**		**267**		**137**		**1,227**	
% of total	***0.3%***		***6.4%***		***15.5%***		***20.8%***		***24%***		***21.7%***		***11.2%***		***100%***	

f = female, m = male

Graph 10 shows the distribution of deaths among men and women in different age groups and provides a better basis for comparison.

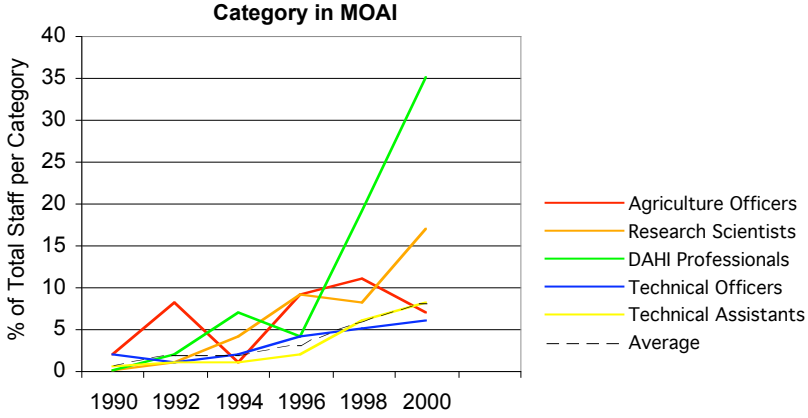
Graph 10. Death-Related Attrition by Sex and Age Group in MOAI



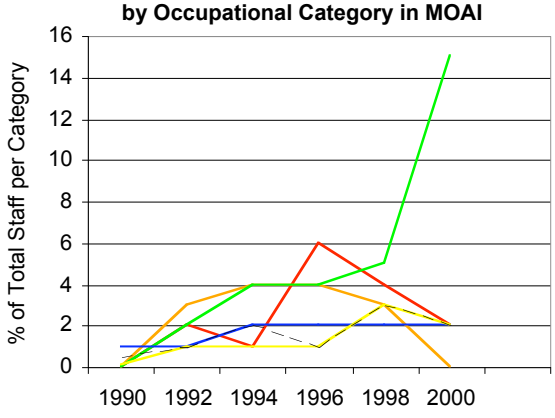
Attrition by occupational category

Graph 11 shows attrition rates by occupational categories, which are expressed in percentage terms as a proportion of officers who were in post in selected years. Graph 12 shows death-related attrition trends. Appendix 4 and 5 illustrate how the rates in both graphs have been calculated. The graphs only include technical cadres. Support cadres are excluded due to the difficulties experienced in determining the number of officers in post.

Graph 11. Attrition Rates by Occupational Category in MOAI



Graph 12. Death-Related Attrition Rates by Occupational Category in MOAI



Graph 11 shows that the highest attrition rate occurs among DAHI Professionals, followed by Research Scientists, with an attrition rate of 35% and 17% respectively. While the attrition rate of DAHI Professionals and Research Scientists increases sharply, especially after 1996, the rate of Agriculture Officers shows a decline. The attrition rate of Technical Assistants is

rising steadily during the whole period. Overall, the average attrition rate among technical cadres increases from 0.6% in 1990 to 8% in 2000.

On the other hand, Graph 12 shows an increasing trend in deaths among all occupational categories between 1990 and 1994. Thereafter, there is a sharp increase in mortality rates among DAHI Professionals and, to a lesser extent, among Agriculture Officers and Technical Assistants. The trend in mortality rates among Technical Officers remains constant, whereas a declining trend is noted among Research Scientists.

To establish which skills are mostly affected by this loss of staff, Standardised Mortality Ratios (SMRs) are calculated.

Table 18. Standardised Mortality Ratios for MoAI Staff

Occupational Category	Expected Deaths	Observed Deaths	SMR
Agriculture Officers	19.3	39	202
Research Scientist	8.8	21	238
DAHI Professionals	4.6	21	457
Technical Officers	41.9	68	162
Technical Assistants	474.6	707	149
Others	258	443	171

As Table 18 shows, all occupational categories experienced excess mortality, with higher mortality rates among professional staff than among junior technical staff and support staff. The SMR of DAHI Professionals indicates that this staff category is most affected. The SMR value of 457 indicates that observed deaths among this group are four and a half times more than expected deaths. Deaths among Research Scientists and Agriculture Officers are double the average mortality rate in Malawi. It is worth noting that the rate that has been used to calculate the expected deaths is the "with HIV/AIDS" death rate. This implies that the Ministry could be experiencing a higher number of deaths than the general population.

HIV/AIDS-related mortality

As noted in the Malawi AIDS Assessment Study report, AIDS is currently the dominant determinant of adult mortality in Malawi. It is therefore apparent that most of the excess deaths experienced among the employees in the MoAI is as a result of HIV/AIDS. However, linking the deaths that occurred in the Ministry from 1990 to 2000 to HIV/AIDS is not easy because of a lack of clinical diagnosis of what caused the deaths and the absence of information on the seroprevalence status of the deceased. As highlighted throughout this report, HIV/AIDS itself is not a disease but a condition that provides fertile ground for opportunistic infections to thrive and kill the infected person. Although there is evidence that suggests that 77% of TB patients in Malawi also have HIV/AIDS (GOM/World Bank, 1998),

it has been problematic to extrapolate from this the potential number of MoAI employees who are likely to have died of HIV/AIDS, because TB may not always have been noted in their personal files. With these limitations in mind, it can be assumed that 28 out of the 36 officers who were recorded to have died of TB might have died of HIV/AIDS. In addition, nine officers were recorded to have died of opportunistic infections highly associated with HIV/AIDS.[11] It can therefore be assumed that these nine employees died of HIV/AIDS.
Finally, 265 officers were recorded to have died of long illness. Since long illness is associated with HIV/AIDS, it can be assumed that they have died of HIV/AIDS. Thus, based on the preceding calculations, it is possible that a total of 302 out of 1,613 death-related cases of attrition could be related to HIV/AIDS. This represents 19% of the total number of deceased employees.

Due to the unreliability of personnel files, the NACP ratio of estimated HIV/AIDS-related deaths among professionals has been used to calculate the number of MoAI employees who might have died of HIV/AIDS (see Table 19).

Table 19. Estimation of HIV/AIDS Cases in MoAI

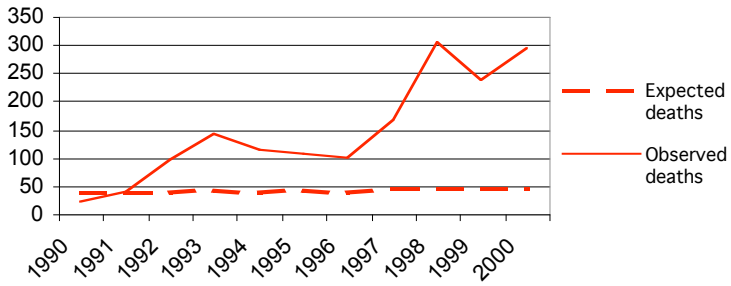
Year	NACP % of AIDS Cases among Professionals	Number of Deaths	Possible AIDS Cases
1995	11.8%	107	13
1996	9%	98	9
1997	9.7%	165	16
1998	9.6%	304	29
1999	9.6%	236	23
2000	9.6%	294	28
Total		1,204	118

As Table 19 shows, a total of 118 employees might have died of HIV/AIDS between 1995 and 2000. This amounts to 9.8% of the total number of deceased persons during this period. Applying this percentage to the total number of deaths (1,613) in the Ministry between 1990-2000 suggests that 158 employees might have died of HIV/AIDS.

Comparing trends of death between two scenarios, one "with HIV/AIDS" and one "without HIV/AIDS", can also help in linking the deaths to HIV/AIDS. Both scenarios are depicted in

[11] Six people died of Kaposis Sarcoma, one of HIV, one of Immune-suppression and one of Posterior Uveitis Bilatellary.

Graph 13. Observed and Expected Deaths in MOAI



Graph 13. The scenario 'without HIV/AIDS' has been calculated based on the adult mortality rate of 6.4 to 1,000, which prevailed in 1986 (DHS, 2000). This rate has been used in the absence of information on death rates prior to 1985, when the first AIDS case was discovered in Malawi. The scenario 'with HIV/AIDS' has been calculated using the observed deaths. The graph clearly shows excess mortality from 1991 to 2000, with an ever-increasing gap between the two scenarios. These trends can only be explained in terms of HIV/AIDS, especially since most of these deaths occur among young adults, where under normal circumstances adult mortality is low, as indicated in Table 17.

The mortality trends and the SMR values related to the MoAI indicate that the annual death rate in the Ministry has increased. They also show the Ministry has a mortality rate above the average for the general population of Malawi. The preceding discussion has argued that HIV/AIDS is a considerable factor in the increases in deaths and the excess mortality in the Ministry.

Morbidity and absenteeism

The Ministry has no system for keeping records on absenteeism and morbidity. All the Heads of Departments and Sections interviewed stated that they have cases of absenteeism and chronic and repeated illness in their sections/departments. For example, 71% of Heads of Departments/Sections said that there were on average one to two cases of chronic or frequent illness in their department or section. However, most of them said they just take note when someone is absent or ill. They believed it was the responsibility of the Human Resource section to deal with such issues.

The main reasons given for absenteeism among male employees, in order of priority, were personal sickness, funeral attendance and attending to personal matters. For female staff, the reasons included personal sickness, looking after sick people and funeral attendance. Other reasons mentioned for both men and women included lack of money, which makes them engage in income-generation activities during working hours, low staff morale and lack of transport to come to the office.

The study found that most officers in the Ministry who absent themselves for prolonged periods of time do so when they are chronically ill. The main illnesses that affected those who were chronically or frequently ill were malaria followed by tuberculosis and hypertension. Other diseases mentioned were skin problems, headache, gout, chest pains, diarrhoea, meningitis, pneumonia, shingles, general body pains, wasting away, swelling of legs, ulcers, cough, diabetes, fever and rheumatism. Some of these diseases are opportunistic infections that are closely associated with HIV/AIDS, such as tuberculosis, shingles, skin problems and wasting away. In addition, it is worth noting that other studies in Malawi have shown that there is an increase in malaria with the advent of HIV/AIDS. As highlighted above, malaria was quoted as a major disease suffered by those who are chronically or frequently ill. In the absence of HIV/AIDS, malaria among adults is treatable. It can therefore be concluded that HIV/AIDS is a major determinant of morbidity in the Ministry.

The study found that, on average, employees absent themselves for between 1-10 days per month due to personal illness, about 2-5 days per month to care for the sick and between 1-10 days per month to attend funerals. In the absence of recorded data on the levels of absenteeism, an estimate is made based on the AIDSCAP projections.[12] Thus, if 16% of MoAI employees in 2000 were likely to be HIV-positive, this would mean that 1,164 MoAI staff would have absented themselves from work due to ill health. Of these, 294 resulted in death (see Table 19), which translates into a loss of 19,110 working days, or 223 months. The remaining 870 people are likely to have been absent for 13,050 days in total, or 593 months. Thus, in 2000 HIV/AIDS-related morbidity and (eventually) mortality may have resulted in a loss of 816 productive months for the MoAI.

Another interesting finding was that although high levels of morbidity were noted in the MoAI, very few people were on sick leave. Only 14% of respondents said some officers were on sick leave. Out of about 156 employees who were said to be chronically or frequently ill, only two were said to be on official sick leave. This indicates that there is laxity in the enforcement of the sick leave policy.

[12] AIDSCAP suggests that AIDS deaths are likely to be preceded by 65 days of absenteeism, whereas people living with HIV/AIDS are likely to be absent for 15 days each year due to ill health.

Most managers stated that it is difficult to implement the sick leave policy because of lack of records on absenteeism and on humanitarian grounds, since people are in greater need of money when they are ill. However, most junior officers felt that the sick leave policy is only applied to junior officers, while senior officers get away with it.

The sick leave that is currently being implemented in the Public Service was introduced before the advent of HIV/AIDS, when cases of prolonged illnesses were very few. Some employees argued that both from the organisation's point of view and from the side of employees this policy was unsuitable in the era of HIV/AIDS. From the perspective of employees, it was stated that those who suffer from prolonged illnesses (some of which could be HIV/AIDS-related) need more financial resources for a better and high protein diet and for medication, since there is no medical scheme for civil servants. Reducing and eventually withdrawing the salary as stipulated in the sick leave policy was therefore seen as a punitive way of sending employees to the grave prematurely. From the organisation's point of view, it was stated that the operations of a section or a department suffer when there are several cases of prolonged illness in a particular occupational category or when it concerns an officer with rare but critical skills. Most respondents suggested that the sick leave policy should be reviewed and replaced by a new and a realistic policy that strikes a balance between the needs of the government and those of the employees. Some officers consulted during the study felt that employees should continue receiving their salaries throughout the period that they are ill. Others, however, felt that the government cannot overstretch its resources to pay people who are not productive for unlimited periods of time. The latter group therefore suggested that government should allow those who are ill for prolonged periods to retire on medical grounds.

Vacancy analysis

This section provides an analysis of vacancy levels in the MoAI between 1996 and 2000. Complete information on years prior to 1996 was not available. The Ministry of Agriculture has had a staff establishment of 7878 throughout the 1990s. Although the Ministry has been experiencing vacancies among all cadres, the analysis only focuses on technical cadres.

Table 20. Vacancy Levels for MoAI Staff, 1996-2000

Occupational Category	1996				1998				2000			
	Posts	Filled	Vacancy	%	Posts	Filled	Vacancy	%	Posts	Filled	Vacancy	%
Agriculture Officers	203	155	48	24 %	203	169	34	27 %	203	122	81	40%
Research Scientists	106	75	31	29 %	106	71	35	33 %	106	60	46	43%
DAHI Professionals	62	46	16	26 %	62	21	41	66 %	61	20	41	67%
Technical Officers	661	331	330	50 %	661	326	335	48 %	661	385	276	42%
Technical Assistants	4,240	4,059	181	4%	4,240	3,724	516	12 %	4,240	3,200	1,040	25%

Table 20 shows high vacancy rates among all occupational categories. The highest vacancy rates are among DAHI professionals (67% in 2000) followed by Research Scientists (43% in 2000) and Technical Officers (42% in 2000). Discussions with officials in the Ministry revealed that vacancies are more prevalent at ADD level than at Headquarters. It was indicated that in the 1980s, the Section had about 30 qualified Veterinary Surgeons. As of September 2001, there were only 12 qualified Veterinary Surgeons of which only 3 were in the ADDs. Interviews with various officers confirmed that vacant positions at ADD level included those of Divisional Veterinary Officers, Beef Specialists, Poultry Specialists and, to a certain extent, Veterinary Assistants. This is an important aspect considering that the ADD is the unit that is in contact with smallholder farmers. For the Ministry's mission to be achieved, there is need for the ADD to be strengthened and to avoid vacancies at that level.

Vacancies and HIV/AIDS

Whereas vacancy levels in the MoAI may be attributable to various factors, of particular interest to this study is the extent to which deaths, especially HIV/AIDS-related deaths, have contributed to the vacancy situation. The attrition analysis revealed that the skills most affected by attrition were DAHI Professionals and Research Scientist. These occupational categories also show the highest vacancy rates. A further analysis of vacancies in relation to deaths indicates that deaths are likely to have contributed significantly to the vacancies, because DAHI Professionals, Agricultural Scientists and Agriculture Officers experienced disproportionate levels of excess mortality, with DAHI Professionals topping the list. Officials in DAHI confirmed this perception.

Coping strategies

The study found that the MoAI has deployed a number of strategies to cope with the increasing vacancies. These include the reallocation of duties to remaining staff, redeployment of retired staff, the use of expatriate staff and the use of volunteer farmers.

- Reallocation of duties to remaining staff

As stated earlier, most vacancies are experienced at field level. Many Technical Assistants are made to act in the positions of Technical Officers at RDP level. Some Technical Officers are working in Professional Officer positions in RDPs and at ADD level. For example, at the time of this study Lilongwe ADD had a total of 32 positions of Field Officers (TO) to head EPAs. Out of these, only 10 EPAs are headed by Technical Officers, whereas the rest are headed by Technical Assistants. It was stated that most Field Assistants have been requested to cover at that level. Technical Assistants at section level are working in two instead of one section, while some Farm Home Assistants have been requested to work as Field Assistants in sections where there are vacancies. Senior Officers in DAHI confirmed a shortage of Divisional Veterinary Officers in the five ADDs, where officers of lower grades like Veterinary Assistants and other non-veterinarians are carrying out the responsibilities of Veterinary Officers.

The study also found that most officers who are made to act in higher positions have not been exposed to upgrading or refresher courses to prepare them for their responsibilities. As a result, most of them are simply muddling through the responsibilities and often refer issues to their Heads of Departments for assistance and problem solving. One Technical Assistant in Lilongwe ADD commented: "Some of these TAs who have been made to lead us cannot be taken seriously, because we are more qualified than them but they have been given higher responsibilities that they cannot handle. The man went as far as standard 8, and I do not believe that such a person can effectively lead us at EPA level." This statement indicates that the credibility and authority of these caretakers is questioned and consequently undermined by those they are supposed to lead. This definitely leads to poor relations and teamwork that can undermine effectiveness in programme implementation and service delivery.

- Redeployment of retired Field Assistants

Since training of Field Assistants at the National Resources College (NRC) stopped around 1995, the Ministry has resorted to redeploying retired Field Assistants to fill existing gaps.

Although these have, to a certain extent, reduced existing vacancies, some officers and their fellow Field Assistants have been sceptical about the effectiveness of the redeployment of Field Assistants. Although the redeployment of retired staff is a good short-term strategy, a long-term solution to the problem is required. It is in this vein that the Ministry is currently looking for funds to resume training for Technical Assistants at the NRC.

- Use of expatriate staff

The DAHI uses expatriate staff to fill the positions of Veterinary Surgeons. Experts from Japan and European Union countries, like Germany, fill some vacant posts of Veterinary Surgeons. Other posts are filled by representatives from the Voluntary Service Organisation (VSO) from the UK. As of 2001, about 40% of Veterinary Surgeons were expatriates.

- Use of volunteer farmers

Due to a shortage of field staff, the Ministry has been using some progressive volunteer farmers to train other farmers, especially laggards and early adopters. According to some officers interviewed, the system seems to be working well. In the veterinary department efforts have also been made towards training some progressive livestock farmers in providing basic veterinary services to fellow farmers in their communities. These services include artificial insemination and treatment of simple diseases, like tick-borne diseases.

Workload analysis

All interviewed staff stated that their workload had increased as a result of the number of vacancies in their sections or departments. It was noted that increased workload particularly affects field staff, because they are at the helm of service delivery. To analyse the workload of frontline extension staff, Table 21 compares the ratio of Field Assistants to farmers in 2000. The standard ratio is one Field Assistant to 500 or, at most, 700 farmers. Yet, the average ratio is 1 : 1,600, indicating a double to triple workload for Field Assistants. Even Field Assistants in ADDs with lower ratios, like Karonga, Mzuzu, Salima and Shire Valley, have heavier workloads because they work in more than one section, despite the stipulation that each Field Assistant should be working in one section.

Table 21. Ratio of Field Extension Assistants to Farmers, 2000

ADD	RDP	EPA	Section	Established Posts	Staff In Post	Farmers	Staff : Farmer Ratio
Karonga	2	9	314	104	133	66,757	1 : 502
Mzuzu	4	32	461	268	342	185,901	1 : 543
Kasungu	5	24	396	232	151	270,000	1 : 1,788
Machinga	5	29	588	596	278	484,911	1 : 1,744
Salima	3	14	273	560	240	182,734	1 : 761
Lilongwe	5	32	596	394	209	452,244	1 : 2,164
Blantyre	5	20	587	544	231	500,000	1 : 2,164
Shire Valley	2	11	325	184	171	143,987	1 : 842
Total	**31**	**174**	**3,540**	**2,880**	**1,426**	**2,286,534**	**1 : 1,603**

The preceding discussion suggests that HIV/AIDS-related morbidity and mortality have influenced high levels of absenteeism and vacancy rates in the MoAI. The remainder of this section will make inferences of the impact of these variables on productivity, financial resources and service delivery.

Impact on productivity and performance

According to the officers consulted during this study, the performance of employees who are either frequently or chronically ill ranges between average and non-productive, depending on the illness. While 33% of respondents said the productivity of such officers on the job is average, 53% said it is below average and 14% said such officers are not productive. From these responses one can see that individual productivity levels depend on the nature and duration of the illness.

Furthermore, low morale was reported among most employees, especially field staff with an increased workload resulting from vacancies and absenteeism. The main reason cited for low morale was lack of additional remuneration or incentives for the extra work and responsibilities.

The study further found that the productivity of civil servants is reduced because of the amount of time spent attending funerals. Most senior officers consulted during the study confirmed that when a member of staff dies, sometimes the whole organisation will close for business.

Financial implications

Table 22. Training Costs in MOAI

Level of Training	Duration	Cost of Training	Salary Paid During Training	Total
PhD (UK)	3 years	US$ 45,000	US$ 4,035	US$ 49,035
MSc (UK)	2 years	US$ 26,483	US$ 2,690	US$ 29,173
MSc (UK)	1 year	US$ 13,241	US$ 1,345	US$ 14,586
BVM (Zambia)	6 years	US$ 31,289	US$ 8,071	US$ 39,360
Short courses (in Africa)	5 weeks	US$ 10,071	US$ 92	US$ 10,173
Short courses (outside Africa)	8 weeks	US$ 23,734	US$ 495	US$ 24,229

Training and recruitment

Replacement costs of public servants include recruitment costs, training costs and the opportunity cost of lost productivity during the time the post is vacant. The Human Resource section in the MoAI could not establish exactly how long it takes and how much it costs to fill various positions in the Ministry. However, interviews with senior managers revealed that filling a post takes between six months to more than a year. An officer from the Civil Service Commission confirmed that the period of six months was the minimum period for the Commission to process applications for a position.

Table 22 shows the estimated training costs according to the Training Unit in the Ministry. It could be argued that government investment in training is only lost when the person dies immediately after training. When death occurs after serving for some years after the training, the loss cannot be equated to the total cost of training because by then government would have reaped some return from its investment in the person. To calculate replacement cost of dead officers and those who retired prematurely or resigned, we can look at the qualifications lost by subtracting the age at which the officers exited the service from the mandatory retirement age of 55 (see Table 23). The replacement cost is also supposed to include the cost of recruitment. However, the Ministry was unable to provide this information.

As Table 23 shows, between 1990 and 2000 the Ministry lost 1,367 years of productivity of professionals with first degrees and above. This amounts to a total replacement cost of US$ 9,014,998. If HIV/AIDS is likely to account for 9.8% of the 121 deaths among Professional Officers, it means that 12 of these deaths could be HIV/AIDS-related. If those with a Bachelors degree are excluded, it means that 4 Professional Officers are likely to have died of HIV/AIDS. With an average replacement cost of US$ 74,504 per person, replacement of

these four Professional Officers translates into US$ 298,016. In reality the replacement cost is likely to be much higher, given that the number of HIV/AIDS-related deaths is underestimated.

Table 23. Replacement Costs of Dead Professional Officers in MoAI between 1990-2000

Level of Training	Number of Officers	Total Number of Years	Total Replacement
PhD	18	187	US$ 833,595
Masters	25	271	US$ 7,905,883 (2 years)
Bachelors	71	844	*
Bachelors of Veterinary Medicine	7	65	US$ 275,520
Total	121	1,367	US$ 9,014,998

* Cost not borne by the organisation

Cost of absenteeism

The cost of absenteeism is calculated on the basis of the estimated 816 months of absenteeism due to HIV/AIDS-related morbidity and mortality in 2000 alone. Based on an average monthly salary of MK 3,000, this translates into an estimated opportunity cost of MK 2,448,000 in 2000. The cost of absenteeism in preceding years is more difficult to calculate, as it needs to take into account the estimated HIV prevalence rate for each year.

There is also an opportunity cost related to absenteeism due to funeral attendance. Table 24 gives an estimate of the loss of productive time associated with the attendance of funerals of MoAI colleagues. It is assumed that at least 20 officers would have attended each funeral (although the actual number is likely to exceed this) and that they would have been absent from work for 2 days (although in reality it is likely to range between 2-4 days). Given these provisos and the fact that people attend more funerals than those of their colleagues, the total amount of MK 8,799,000 is on the low side. If 158 deaths are likely to be HIV/AIDS-related, it means that MK 861,000 of the total salary lost could be due to HIV/AIDS.

Table 24 Loss of Productive Time Due to Funeral Attendance in MoAI, 1990-2000

Number of Deaths		Total Funeral Attendants	Total Number of Days Lost	Total Number of Months Lost	Average Salary per Funeral Attendance	Total Salary Lost
Total	1,613	32,260	64,520	2,933	MK 3,000	MK 8,799,000
HIV/AIDS-related	158	3,160	6,320	287	MK 3,000	MK 861,000

Frontline extension workers stated that they are affected more by funerals, since they are also obliged to attend funerals in the community where they live. In a focus group discussion with

some Field Assistants from Lilongwe ADD it was commented that even if they decide not to attend funerals, their programs are still affected because their clientele would be attending a funeral at a time when they are supposed to carry out an on-farm demonstration, for example.

Funeral costs

Considering the increasing number of deaths in recent years, the Ministry has been spending a significant amount on funerals. Yet, there are no records on the exact amounts spent. There is no system in place to monitor and control funeral expenses. In fact, there is no budget line for funerals. Instead, funds are drawn from the administration and general sub-programme to meet these costs. When these funds are expended, money meant for programmes is diverted to funeral expenditure. This undermines the implementation of the programmes. In the absence of information on funeral expenditure, this report estimates the funeral costs that might have been incurred by the Ministry based on the current government policy on support towards the funerals of civil servants.

The current policy on funerals states that when an officer dies, the employer will provide a coffin and a maximum of three vehicles. The policy is extended to the direct dependants of an employee, who include a spouse, children or dependants living with the employee.

The cost of coffins ranges between MK 5,000 and MK 65,000. More expensive coffins are bought for senior officers and cheaper ones are bought for junior officers. Based on the 2000 average monthly death rate of 25 officers and the minimum cost of MK 5,000 per coffin, it can be estimated that in 2000 the Ministry spent MK 1,500,000 on coffins alone.

Transport contributes highly to funeral costs. In addition to the vehicles that are provided to carry the deceased and mourners to the burial place, more vehicles are deployed when it concerns a senior officer. It was indicated during interviews with staff that a funeral of a senior officer in the MoAI may attract up to 20 vehicles. In most cases when a senior officer dies the office will also purchase some food items for the funeral.

Another contributing factor to high transport costs arises from laxity in implementation of the funeral support policy. Most respondents indicated that transport is given to officers to carry the bodies of their extended family members, who were not necessarily living with them, but were referred to the central hospital or were brought to town for better medical care. Thus,

government expenditure on funerals would be minimised if there were a clear policy on funerals and if that policy would be strictly enforced.

Death gratuities

Unlike retirement gratuities, death gratuities are not planned for. Between 1997 and 2000, the MoAI paid out a total of MK 58,405,633 in death gratuities (see Table 25). Death gratuities are linked to the position of the deceased. The increase in death gratuities is related to an increase in overall deaths in the Ministry and to the occupational category of those who have died.

Table 25. Death Gratuities Paid by MoAI, 1997-2001

Year	1997	1998	1999	2000	2001
Total Gratuity	MK 6,720,581.27	MK 11,586,641.66	MK 12,176,230.42	MK 15,325,018.15	MK 12,507,191.51
HIV/AIDS-related	MK 658,617	MK 1,135,491	MK 1,193,271	MK 1,501,852	MK 1,225,705

Impact on service provision

It is clear that vacancies and increased absenteeism have negatively affected service delivery by the MoAI. These negative impacts manifest themselves in various ways.

Inadequate technology generation and dissemination

According to the Department of Agricultural Research and Technical Services, some of the skills that are in short supply are in the area of Livestock and Dairy, Pastures, Soils, Engineering (including irrigation Engineering), Biometrics, Biotechnology and Economics. As a consequence of this skills deficiency, research and technology development in the area of livestock development has lagged behind. In addition, it was reported that economic and social analysis of the technologies developed is not done because of shortage of economic skills. It was argued that this could have contributed to lower adoption of some technologies by farmers.

Low coverage

Interviewees stated that the shortage of staff, especially of frontline extension staff, has led to low coverage of farmers with extension messages because, as stated earlier, Field Assistants have to cover wider areas than designated. The problem is further complicated by a lack of transport to facilitate the mobility of frontline extension workers. The Field Assistants are

currently using bicycles as mode of transport, which makes it impossible for them to cover all the sections assigned to them. In addition, some systems that were put in place to increase access to extension messages have broken down.

Reduced quality of services

It was indicated that low quality services are delivered as a result of using unqualified staff in higher and/or professional positions. The officers consulted on this issue asserted that vacancies among frontline extension workers have resulted in the production of low quality messages, in particular in the case where generalists act in the place of Subject Matter Specialists (SMS). Another example was given of DAHI, where Veterinary Assistants are delivering some of the services that are supposed to be delivered by Veterinary Surgeons, thereby compromising the quality of the service.

Delayed programme implementation

Eroded capacity has delayed the implementation of some important programmes in the Ministry. One such program is the National Livestock Development programme, which was a response to the 1995 Agriculture and Livestock Development Strategy and Action Plan. According to a senior officer in DAHI, the programme still only exists on paper. A lot of capacity building has to be done for this programme to be effectively implemented.

Lack of programme monitoring and evaluation

Furthermore, programme monitoring has been affected by a shortage of Monitoring and Evaluation Officers in the ADDs. Reduced supervisory visits to the field by senior officers at ADD level and Ministry level have also affected programme implementation. At RDP level, there are certain programmes like land conservation and soil management that need close monitoring with the farmers by the extension worker. It was stated that as soon as there is laxity in supervision, land resource activities die. Yet, these activities are critical for sustainable agriculture.

Institutional vulnerability to HIV/AIDS

The preceding discussion has highlighted the multiple impacts of HIV/AIDS on the MoAI. This section will summarise the key factors that enhance, or limit, the institutional vulnerability of the MoAI to HIV/AIDS.

Lack of capacity in human resource planning

Although the MoAI has a Human Resource Planning section in the Department of Human Resource Management, the section is dormant. The Section is supposed to have five Human Resource Planners, yet it has no personnel. Consequently, the Ministry has no capacity to determine human resource requirements for the sector. As a consequence, various projects and programmes authorised by the Ministry do not include components on the human resources requirements to accomplish the objectives of the programmes and projects. An example is the 1995 Agriculture and Livestock Strategy and Action Plan, which is the basis of the Malawi Agricultural Sector Investment Programme (MASIP).

Furthermore, projections on human resource requirements are not based on a comprehensive attrition and vacancy analysis. As a consequence, there is a lack of succession planning, which is more severe in specialised departments like the Department of Animal Health and Industry and the Department of Agricultural Research. For example, to become a Veterinary Surgeon, one has to undergo five years of training outside the country. Since 1996, the DAHI has not sent people for training in Veterinary Medicine. As a result, the Ministry is currently failing to replace those who are leaving the Ministry.

The problem is exacerbated by the lack of budget provision for training in the Ministry and in the DHRMD. In addition, donor support for training to the sector has also dwindled.

Delayed replacement of staff

Centralised and cumbersome recruitment procedures delay the replacement of staff by up to 12 months. In the meantime, the operations of the Ministry are likely to suffer and pressure on remaining staff will increase.

Failure to attract new recruits from the labour market

Failure to attract new recruits from the labour market has been one of the main causes of vacancies among Veterinary Surgeons. Management in the Veterinary Section of DAHI confirmed that it has been difficult to attract graduates from the University of Malawi to join the Department for overseas training in Veterinary Medicine. It was argued that there is stiff competition for candidates for training in Human Medicine and Veterinary Medicine, because the entry qualifications are the same. When given an opportunity of a scholarship for both, most people opt for Human Medicine. The main reason for this is that Veterinary Medicine is

not accorded the same pride and status as human medicine.

Misallocation of human resources

There are more officers at the Ministry's headquarters than in the field where service delivery occurs. This is accentuated by the fact that most senior positions (especially in super-scale grades) are located in Departmental or Ministry headquarters. This increases movement of people to headquarters on promotion, resulting in a loss of skills at the level of service provision. In most cases, the vacancies they leave behind are never filled or are filled with a delay.

Inadequate financial and material resources

The study found that inadequate financial and material resources compromise the ability of the Ministry not only to effectively deliver services, but also to develop coping strategies in response to HIV/AIDS.

Workplace interventions on HIV/AIDS

The MoAI has a comprehensive HIV/AIDS programme that was initiated with the support of UNAIDS-Malawi. Such a workplace programme can be a significant step in addressing institutional vulnerability to HIV/AIDS. The programme has two components, namely the Rural AIDS Project and HIV/AIDS Workplace Interventions. The Rural Aids Project aims at mitigating the impact of HIV/AIDS on agricultural productivity. It focuses on sensitising and educating field staff, farmers/villagers and other community workers in the field on issues of HIV/AIDS and on behaviour change. This component was implemented as a pilot in Lilongwe West RDP, where it has been ranked effective. In addition, all Heads of Departments and ADDs were sensitised to this programme. Plans are underway to expand the programme to other RDPs in the ADDs, depending on availability of funds.

The second component, the HIV/AIDS Workplace Programme, aims at sensitising and educating members of staff on HIV/AIDS and on the provision of counselling and support services in the workplace. Various achievements have been recorded, such as the usage of condoms placed in toilets (an indication that officers use them) and the provision of counselling services.

The Ministry has a Task Force on HIV/AIDS, chaired by the Principal Secretary responsible for Administration and Finance. All departments and ADDs have desk officers, who are responsible for mainstreaming HIV/AIDS and gender issues into all programmes and activities in the Ministry.

The study found that all categories of staff in the Ministry appreciate the HIV/AIDS programme, because they feel that a programmer within the organisation is more effective in reducing the spread and intact of HIV/AIDS. It is therefore recommended that donors support this programme financially so that it can expand to other ADDs. In addition, for commitment and sustainability, government should include HIV/AIDS activities in the budget.

It is also recommended that the HIV/AIDS Workplace Programme should encourage employees to go for voluntary counselling and testing and be open about their status. This would also facilitate succession planning. The HIV/AIDS Workplace Programme should also focus on dealing with stigmatisation.

Conclusion

Between 1990 and 2000, there has been an increasing trend of attrition in the MoAI, with death and retirement as the main causes. Premature retirements predominantly occur among professional staff, especially Research Scientists, and front line extension workers, like Technical Officers and Technical Assistants. The study reveals that women start exiting the Ministry at an earlier age than men. Excess mortality is noted among all technical cadres, with the highest mortality rate noted among DAHI Professionals. The study has shown that some of the diseases affecting MoAI staff are opportunistic infections that are closely associated with HIV/AIDS. Thus, it is concluded that HIV/AIDS has definitely contributed to excess mortality in the Ministry. It has also aggravated the level of vacancies in the Ministry. Although there was no data on morbidity and absenteeism, estimates confirmed by qualitative data demonstrate high levels of morbidity and absenteeism in the MoAI. Although the Ministry has put in place a number of coping mechanisms, it is vulnerable to HIV/AIDS, mainly because of the policy environment it operates in. As a result, HIV/AIDS is compromising productivity, programme implementation and service delivery and puts strain on the Ministry's financial resources.

3. MINISTRY OF HEALTH AND POPULATION (MOHP)

Introduction

The overall goal for the Ministry of Health and Population (MoHP) is to raise the levels of health of all Malawians through a delivery system capable of promoting health, preventing and reducing the occurrence of premature or avoidable deaths. Health care in Malawi is delivered at three levels: primary, secondary and tertiary. Primary Health Care (PHC) is considered the main strategy to realise the overall goal. For this purpose, the Ministry gives priority to medical assistants and enrolled nurses who serve at all levels of care but are the mainstay of primary health care. However, the MoHP is facing constraints in achieving its mission through the Primary Health Care strategy. These include inadequate and poorly distributed trained health personnel.

Health sector reform

The National Health Plan 1999-2004 promulgates several elements of health sector reforms. These include: decentralisation of authority and responsibilities to District Assemblies; creation of hospital autonomy; creation of an essential health care package for the provision of cost-effective prevention, treatment and care at community level; cost recovery measures to enhance health sector financial resources; and, a coordinated sector-wide approach to funding for the health sector from donors and the government.

Methodological considerations

In seeking to establish the impacts of HIV/AIDS on the MoHP and on health workers, this study found that information systems are in disarray. This meant that not all information required was found. The findings presented here are therefore only exploratory. More detailed studies, focusing on a selected sample of health workers, are needed to have a more thorough analysis of the impact of HIV/AIDS on the MoHP.

Attrition

General attrition levels

Death is the highest cause of attrition in the MoHP, followed by retirement, resignation, dismissal and redundancy (see Table 26). In fact, death-related attrition is more than the other

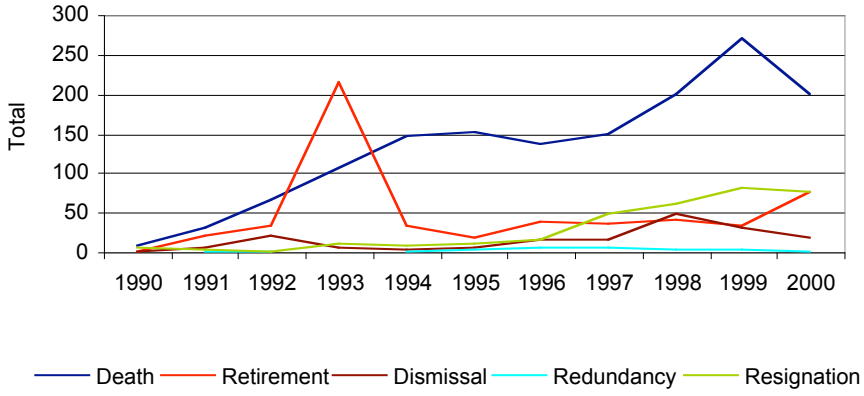
causes combined. Death increases steadily throughout the 1990s and peaks in 1999, after which it drops.

Table 26. General Attrition by Cause and Year for MoHP

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	*% of total*
Death	8	30	65	107	145	152	137	150	198	270	200	**1,462**	***58%***
Dismissal	1	4	2	4	3	6	15	14	49	30	18	**146**	***5%***
Redundancy	0	1	0	0	1	3	5	6	3	2	1	**22**	***0.8%***
Resignation	4	3	1	11	7	11	15	47	61	81	76	**318**	***12%***
Retirement	1	21	33	215	34	17	37	36	40	34	76	**544**	***21%***
Total	**14**	**59**	**101**	**337**	**190**	**189**	**209**	**253**	**351**	**417**	**371**	**2,492**	

Retirement reaches a high point in 1993, when the Government strictly enforced its retirement policy. Between 1994 and 1999, it remains fairly constant, until it increases again in 2000. Resignation stays relatively constant until 1996, after which it increases substantially. This was around the same time when the health service was liberalised. As a result, many health workers moved to private practices with better benefits. Graph 14 captures these trends in graphic form.

Graph 14. Attrition by Cause and Year in MOHP



Attrition by sex and age group

Death-related attrition by sex and age group is reflected in Table 27. Death is particularly high in the age groups 30-34 (19%), 35-39 (21%) and 40-44 (19%). It is lowest in the 20-24 years age group (1%), followed by the age group 25-29 years (8%). The high percentage of death noted in young adults between 30-44 years old reflects broader trends in Malawi, as noted by the NAC. Most of these young adults are sexually active – and have been for some time, bearing in mind the period of delay between HIV infection and AIDS-related death.

This situation has the potential of depriving the ministry of quality leadership, because this is generally the age group that is likely to take up senior management positions. It will also distort output levels, quality of work and career structures.

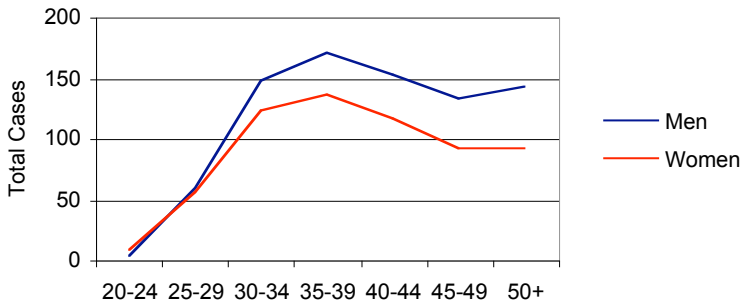
Table 27. Death-Related Attrition by Sex and Age Group in MOHP

	20-24		25-29		30-34		35-39		40-44		45-49		50+		Total	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Total	9	4	55	59	123	147	136	171	116	153	92	132	92	143	623	809
%	*0.6 %*	*0.3 %*	*4%*	*4%*	*9%*	*10 %*	*9%*	*12 %*	*8%*	*11 %*	*6%*	*9%*	*6%*	*10 %*	*44 %*	*56 %*
Total	**13**		**114**		**270**		**307**		**269**		**224**		**235**		**1,432**	
%	***1%***		***8%***		***19%***		***21%***		***19%***		***16%***		***16%***		***100%***	

f = female, m = male
*Excludes all records (253) where sex was not indicated

Table 27 also shows that in absolute numbers more men (56%) die than women (44%). Graph 15 further captures these trends by sex and age group. It shows that both male and female deaths peak in the 35-39 age group. This is at variance with the assessment of the NAC, which states that female deaths peak at a younger age group in the general population. However, the graph shows that female deaths start to peak slightly earlier than male deaths. Women form the bulk of health workers and mostly work at the frontline. They are therefore crucial in the implementation of the Primary Health Care strategy.

Graph 15. Attrition by Sex and Age Group in MOHP



Attrition by occupational category

Table 28 shows death rates by occupational categories for selected years. Average death rates for the period show that the highest death rate is experienced by Laboratory Technicians (47.5), followed by Clinical Officers (31.8), Environmental Health Workers (29.8), Medical Assistants (23.3), Enrolled Nurses (20.3) and Registered Nurses (15). The lowest average death rate occurs among Health Surveillance Assistants (6). Thus, most occupational categories show a higher mortality rate than the average adult mortality rate of 11.2 in Malawi (DHS, 2000).

Table 28. General Attrition by Occupational Category per 1000 MoHP Employees for Selected Years

	1992			1996			1998			2000		
Occupation	**In post**	**Dead**	**Rate/ 1000**	**In post**	**Dead**	**Rate/ 1000**	**In post**	**Dead**	**Rate/ 1000**	**In post**	**Dead**	**Rate/ 1000**
Clinical Officer	143	3	20	227	6	26	205	14	68	381	5	13
Medical Assistant	407	6	14	208	7	33	410	13	31	776	9	15
Registered Nurse	519	3	5	422	8	18	389	11	28	438	4	9
Enrolled Nurse	1,017	9	8	962	28	29	1,264	27	21	1,655	39	23
Environmental Health Officer	23	1	43	96	2	20	94	5	53	315		3
Health Surveillance Assistant	496	7	14	3,531	22	6	3,347	30	8	5,040	28	5
Laboratory Technician	18	1	55	22	11	45	22	2	90	47	0	0

To rectify the shortfalls inherent in the crude mortality rates, standardised mortality ratios (SMRs) have been calculated for selected occupational categories using the average adult mortality rate. They cover the period 1996-1999. The findings are reflected in Table 29. Where the SMR exceeds 100 it means that mortality is higher than average mortality in the general population of Malawi.

Table 29. Standardised Mortality Ratios for MoHP Staff

Occupational category	Expected Death	Observed Death	SMR
Medical Assistant	15.4	44	285
Clinical Officer	8.9	35	393
Registered Nurse	13.9	29	208
Enrolled Nurse	43.3	79	182
H S A	132.9	115	86
Environmental Health Officer	15.2	9	59
Laboratory Technician	0.9	9	1000

The table shows higher than average SMR values for laboratory technicians, clinical officers, medical assistants, registered nurses and enrolled nurses. In fact, the SMR for laboratory technicians is 10 times more than the average mortality in the general population. The SMR of clinical officers is almost three times over the average mortality of 100, while that of registered nurses and medical assistants is more than double this benchmark. The SMR of enrolled nurses also exceeds 100. This indicates excess mortality for these officers, who are central to the delivery of health care at all levels of care.

HIV/AIDS-related mortality

The main causes of death as listed in the personnel files of the dead included short illness and long illness. In a few cases, specific diseases such as TB, chronic productive cough and pneumonia were indicated. Although long illness and TB or pneumonia can be indicators of

HIV/AIDS, in the absence of clinical diagnosis it is difficult to determine the number of people who have died of HIV/AIDS.

Table 30. Estimation of HIV/AIDS Cases in MoHP

Year	NACP % of AIDS Cases among Professionals	Number of Deaths	Possible AIDS Cases
1995	11.8%	152	18
1996	9%	137	12
1997	9.7%	150	15
1998	9.6%	198	19
1999	9.6%	270	26
2000	9.6%	200	19
Total		1,107	109

As Table 30 shows, 9.8% of deaths in the MoHP between 1995 and 2000 are likely to be caused by HIV/AIDS. When applied to the total number of deaths (1,462) in the MoHP between 1990-2000, it means that 143 deaths could be HIV/AIDS-related. This figure is an underestimate, because the excess mortality experienced in the Ministry suggests a significantly higher number of HIV/AIDS deaths than the estimated number.

Based on the information contained in the DHS (2000) report and other research reports, the only explanation for the excess deaths in the Ministry is HIV/AIDS. This argument is validated by the data in Table 27, which indicates that 68% of deaths occurred in the age group of 20-44.

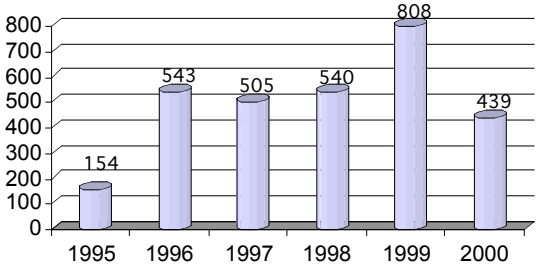
Morbidity and absenteeism

Just like in most Public Service institutions, absenteeism and its causes are not currently recorded in the MoHP. According to the Human Resource Department in the ministry, late reporting for work in the morning and after lunch as well as early departure were other manifestations of absenteeism. Common causes for absenteeism included employee own sickness; attending funerals; time spent in banks; declining real incomes; and, worsening conditions of employment.

Although there is no system for absence management in the MoHP, some MoHP referral, district and peripheral institutions do record absenteeism and related causes. One example is the Nursing Department at Zomba Central Hospital. Other departments at the hospital do not

record absenteeism. This shows that recording of absenteeism is largely based on the personal initiative of supervisors. Some have argued that even if they were to create absence management systems in their departments, there are no clear consequences for those who absent themselves.

Graph 16. Days Lost due to Sickness among Nurses at Zomba Central Hospital



Source: Nursing Department, Zomba Central Hospi

The highest recorded cause of absenteeism in Zomba Central Hospital is sickness, followed by funeral attendance and attending to sick people. Graph 16 shows the number of days lost due to sickness between 1995 and 2000 for nurses at Zomba Central Hospital. On average, every year 498 days are lost to 100 nurses concerned, bringing the average to five days per nurse per annum. The graph shows that morbidity increases substantially from 1995 to 1996. After a slight drop in 1997, it increases again before falling significantly in the year 2000. Major diseases causing nurse morbidity at Zomba Central Hospital are indicated as tuberculosis, kaposis sarcoma, pneumonia and malaria. Almost all departments at MoHP headquarters have chronically ill officers, whereas at Zomba Central Hospital there are more chronically ill officers and staff on sick leave. The evidence from Zomba hospital suggests that absenteeism due to morbidity in the Ministry is high. Consequently, a lot of productive time is lost.

Vacancy analysis

For many years, the Health sector has had a shortage of trained health personnel. Table 31 gives a breakdown of authorised establishments by selected staff category.

Table 31. Selected Staff Category Establishment Analysis in MHP

Staff category	Authorised establishment (Numbers)		Change %
	1992	*2000*	
Medical Officer	133	113	(15%)
Clinical Officer	232	279	20%
Medical Assistant	567	647	14%
Registered Nurse	736	717	(19%)
Enrolled Nurse Midwife	1308	1549	18%
Environment Health Officer	27	114	33%
Health Assistant	261	213	(18%)
Health Surveillance Assistant	0	4909	
Laboratory Technician	31	33	6%
Laboratory Assistant	18	109	506%
Pharmacy Assistant	33	83	152%

Note: ( ) denotes negative change.
Sources: MOHP Human Resource Situational Analysis Report 1992; MOHP Staff Budget Estimates (2000/2001)

With the exception of Medical Officer, Registered Nurse and Health Assistant, establishments for all staff categories have increased between 1992 and 2000. There has been a very large expansion of authorised establishment of Laboratory Assistants and Pharmacy Assistants. As we shall see later, these two categories have large vacancies (see Table 32). This may indicate inadequate numbers coming out of training and lack of mechanisms to attract and maintain them in the MoHP as well as an unrealistic establishment expansion. Also, the impact of deaths cannot be ruled out, considering the excess deaths experienced by most cadres (see Table 29).

An analysis of vacancy levels in the MoHP shows that there has been a general improvement in the staffing situation of the MoHP relative to the authorised establishment in the clinical, nursing and preventive sections (See Table 32 and Appendix 6 for a detailed analysis). However, the positive picture portrayed in 2000 may not mean improvements in actual numbers in post. Rather, it may be a result of the large establishment resulting from the change management functional review report. Staff shortfalls present both opportunities and challenges for the government as a whole and for the MoHP in particular when planning the reforms. Large vacancies result in ineffectiveness and inefficiency in the delivery of services and have the potential to negatively affect the pace and quality of reforms both at macro and micro levels.

Table 32. Vacancy Levels for MoHP Staff, 1992 –2000

Functional group / staff category	1992		1996		1998		2000	
	Deficit	*Vacancy rate*	*Deficit*	*Vacancy rate*	*Deficit*	*Vacancy rate*	*Deficit*	*Vacancy rate*
Clinical								
Doctor	65	*49%*	-	-	41	*36%*	28	*25%*
Clinical Officer	89	*38%*	9	*4%*	74	*27%*	-	-
Medical Assistant	160	*28%*	294	*59%*	237	*37%*	-	-
Nursing								
Registered Nurse	237	*32%*	240	*36%*	338	*47%*	-	-
Enrolled Nurse / Midwife	291	*22%*	381	*28%*	285	*18%*	-	-
Preventive								
Environmental Health Officer	4	*15%*	30	*30%*	35	*27%*	-	-
Health Assistant	23	*9%*	114	*53%*	17	*6%*	8	*3.8%*
Health Surveillance Assistant	-	-	-	-	2563	*44%*	-	-
Technical Support								
Laboratory Technician	13	*42%*	-	-	11	*33%*	-	-
Laboratory Assistant	6	*33%*	8	*10%*	30	*28%*	55	*5%*
Pharmacy Technician	15	*63%*	-	-	3	*19%*	5	*31%*
Pharmacy Assistant	8	*24%*	29	*126%*	-	-	18	*22%*

Sources: MoHP Human Resource Situational Analysis Report 1992; MOHP Human Resource Situational Analysis Report 1997; M0HP National Health Plan (1999-2004); MOHP Staff Budget Estimates (2000/2001).

To meet the strategy requirements, the National Health Human Resource Plan (1999-2004) is giving priority to filling the posts of Laboratory Assistant and Technician, Medical Officer, Radiography Assistant and Technician, Enrolled Nurse and Medical Assistant. However, recruitment in the MoHP is constrained by the bureaucratic recruitment procedure and limited financial resources. Discussions with Ministry officials revealed that it takes up to 12 months to fill a post.

Table 32 does not indicate the vacancy levels between rural and urban facilities. It also does not show the vacancies relative to the different health care levels (primary, secondary and tertiary). However, the National Health Human Resource Plan (1999-2004) in the MoHP indicates large vacancies in rural areas at primary care level. This is certainly jeopardising the Ministry's efforts to implement a comprehensive Primary Health Care (PHC) strategy.

As Table 32 shows, the situation in the technical support area is particularly depressing. There is a high vacancy rate. It is important to note that health care provision is effectively delivered by a team. Thus, understaffing prevalent in the technical support area may not only create service problems in this area, but also adversely affect the activities of other staff categories.

Workload analysis

Among other things, staff to staff ratios measure an officer span of control and hence effectiveness of the supervision system. High ratios have the potential to negatively disrupt the supervision system by making it impossible for supervisors to coordinate various responsibilities and activities. This results in fragmented and vertical implementation of health programmes, which may ultimately compromise the quality of service provision. As Table 33 shows, the ratio of Doctor to Nurse is disproportionate to allow for effective supervision, especially since Doctors are in charge of large health care facilities and programmes with a myriad of responsibilities. The Clinical Officer to Nurse ratio is relatively big. Similarly, large ratios for Health Assistant to Health Surveillance Assistant will hamper effective health care coverage.

Table 33. Selected Staff Ratios in MOHP

Staff categories	1992	1996	1998	2000
Medical Officer to Nurse	1 : 23	1 : 17	1 : 23	1 : 25
Medical Assistant to Nurse	1 : 4	1 : 7	1 : 4	1 : 3
Clinical Officer to Nurse	1 : 11	1 : 6	1 : 8	1 : 5
Health Assistant to Health Surveillance Assistant	1 : 2	1 : 35	1 : 12	1 : 25

Another way of assessing the workload of health workers is to look at the staff : population ratio. Although this measure has shortcomings, it can be an important indicator of the workload of personnel. There are no standard staff : population ratios in the MoHP. As Table 34 shows, the ratio of most staff categories to the total population of Malawi has decreased over time, with the exception of Registered Nurses, Public Health Nurses (data not available for 2000), Health Assistants and Medical Assistants. The ratio of Pharmacy Assistants to the general population has decreased until 1998, after which it shows an increase. However, it is important to bear in mind that during the period under review epidemiological patterns may have changed and become more complex. Occupational risk of infection with blood-borne and other infectious diseases may also have increased within the health sector. This has added to the psychosocial stress of managing terminal illness under conditions of understaffing and inadequate resource allocation. These factors have the potential of increasing actual workloads for health personnel.

Table 34. Health Workers to Population Ratio by Staff Category, 1992-2000

Staff category	1992[a]	1996[b]	1998[c]	2000[d]
Medical Officer	1: 140,880	1 : 131,413	1 : 136,645	1: 117,647
Clinical Officer	1: 66,992	1 : 46,892	1 : 47,992	1 : 26,246
Registered Nurse	1: 19,198	1 : 25,223	1 : 25,959	1 : 33,333
Enrolled Nurse / Midwife	1: 9,419	1 : 7,538	1 : 7,783	1 : 6,042
Public Health Nurse	1: 478,993	1 : 380,160	1 : 983,848	*not available*
Environmental Health Officer	1: 416,515	1 : 115,701	1 : 104,664	1 : 31,746
Health Assistant	1: 40,251	1 : 42,073	1 : 34,280	1 : 48,076
Laboratory Technician	1: 532,214	1 : 483,840	1 : 447,203	1 : 21,276
Laboratory Assistant	1 : 154,513	1 : 145,815	1 : 124,537	1 : 18,518
Pharmacy Technician	1 : 1,064,429	1 : 3,548,166	1 : 756,806	1 : 99,009
Pharmacy Assistant	1: 383,194	1 : 204,701	1 : 115,746	1 : 153,846
Dental Technician	*not available*	1 : 818,807	1 : 258,907	1 : 87,719
Medical Assistant	1 : 23,537	1 : 23,974	1 : 23,996	1 : 28,169
Health Surveillance Assistant	1 : 19,314	1 : 3,014	*not available*	1 : 2,832

[a] *1992 population estimated at 9,579,865*
[b] *1996 population estimated at 10,644,500*
[c] *1998 population estimated at 9,838,486*
[d] *2000 population estimated at 10,000,000*

To sum up, HIV/AIDS-related morbidity and mortality amongst health workers are likely to have a disastrous impact on the Ministry. It results in a decline in productivity. Furthermore, deaths lead to a loss of overall experience among its labour force thereby reducing accumulated knowledge. As a consequence, the MoHP will face higher replacement and training costs. It will also experience a significant increase in expenditure on benefits, medical care and funerals. These impacts will be discussed below.

Impact on productivity and performance

Morbidity reduces the productivity of human capital, while mortality reduces the number of healthy workers, coinciding with a loss of skills and experience. The rise in morbidity and mortality, resulting in higher levels of absenteeism amongst employees and higher vacancy rates in the MoHP, will increase the workload of remaining officers. Consequently, the capacity of the MoHP to deliver health services will be compromised. As Table 34 suggests, high staff : population ratios indicate that the officers in the Ministry have high workloads that affect their productivity and performance, impeding on the coverage and quality of service delivery. This finding was supported by anecdotal evidence from the Ministry.

Financial implications

Training and recruitment

Table 35 shows the annual cost for the training of paramedical workers. During 1990 and 2000, a total of 290 paramedical deaths is recorded. Most paramedical training is for three years. Thus, to replace these health workers would cost a total of MK 13,050,000 (basic training).

Table 35. Annual Training Costs for Recruitment of MOHP Personnel

	Basic Training (Per Person Per Annum)			Post-Basic Training (Per Person Per Annum)		
	Tuition	Boarding	Total	Tuition	Boarding	Total
Amount	MK 9,000	MK 6,000	MK 15,000	MK 66,500	MK 40,000	MK 106,500

Note: Costs are calculated at current value.

In addition to training costs, the Department of Human Resource Management and Development in the Ministry suggests that substantial costs are incurred in recruiting staff. These include costs for advertisement, postal stamps, stationary and conducting interviews, which includes expenditure on accommodation, per-diem and transport. However, the Department was unable to calculate how much it spends on these costs.

Funeral costs

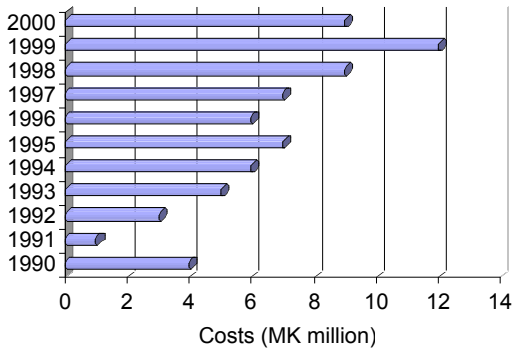
Box 3. Estimated Funeral Costs

· Coffin	MK 10,000
· 3 Wreaths	MK 1,800
· Transport	MK 30,000
· Per diem (2 nights) (driver & welfare worker)	MK 3,920
Total	**MK 45,720**

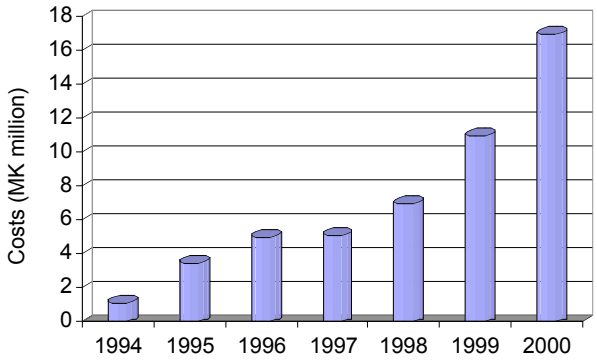
The government policy on material support for funerals includes the provision of a coffin and three vehicles for a member of staff. However, due to a lack of resources only two vehicles are provided. Like the other Ministries surveyed, the MoHP does not calculate the costs of HIV/AIDS-related morbidity and death, nor does it have a budget line item for funerals. However, its Department of Human Resource Management and Development suggested that funeral-related expenditure include direct and indirect costs. Direct costs includes the coffin (which costs on average MK 10,000), wreaths, transport to burial place, and subsistence allowance for the drivers and one official on duty. Indirect costs include transport costs related to funeral arrangements. Box 3 shows that the estimated cost of the funeral of a junior or middle level officer is K45, 720. The costs are at current prices.

A graphic depiction of recent trends in funeral costs for the MoHP is presented in Graph 17. It shows that funeral costs increased annually between 1991 and 1995. The costs fell marginally in 1996, only to increase again until they peak in 1999. Another drop is recorded in 2000, when the costs incurred amounted to MK 9,000,000. In 1990, funeral costs amounted to MK 4,000,000, compared to MK 12,150,000 in 1999.[13] The increased funeral costs mean a diversion of resources that could otherwise have been used to provide effective health care to the Malawi population, for example by purchasing drugs or other complimentary resources.

Graph 17. Funeral Costs for MOHP



Graph 18. Death Benefits in MOHP, 1994-2000



Because the Ministry offers comprehensive employment benefits, the financial implications of HIV/AIDS-related death will be severe. Graph 18 shows the trend in the amount of deaths benefits given out by the MoHP from 1994 to 2000. During this period, the Ministry paid an increasing amount of death benefits. In 1994, the Ministry paid out MK 1,166,273. This amount rose consistently and reached MK 17,724,549 in 2000. The trend in death benefits portrays a clear picture about the increasing number of staff deaths in the MoHP.

Impact on service provision

As highlighted earlier, high levels of absenteeism, vacancy rates and workloads result in a decline in productivity and will compromise the provision of quality health care services. Furthermore, the fact that some of the activities in the Ministry are performed by less qualified staff – a strategy to cope with high levels of vacancies – also undermines the quality

[13] Annual funeral costs have been calculated on current price.

of services. For example, ward attendants, especially in health centres, do most of the work that is supposed to be undertaken by nurses.

Institutional vulnerability to HIV/AIDS

There are various interlocking issues, which make the MoHP vulnerable to the impact of HIV/AIDS. These include the organisational capacity for human resource planning, the increased demand for health services, dwindling resources and a deteriorating working environment. The extent to which the Ministry has workplace interventions on HIV/AIDS is also a significant factor.

Human resource planning and HIV/AIDS

The Department of Human Resource Management and Development at the MoHP has a Human Resource Planning section, which is, however, inactive. Whereas HIV/AIDS morbidity is not taken into account in the process of human resource planning, death is considered somehow, although not in a very systematic way. Because of the weak Human Resource Planning unit, no rigorous and regular attrition analysis is conducted in the MoHP.

Increased demand for health services

Discussions with senior managers in the Ministry revealed that demand for health services has increased due to the increased morbidity in the general population caused by HIV/AIDS. Records from the Ministry indicate that HIV/AIDS-related illnesses account for 60% of hospital occupancy. Yet, the output of health services training is not sufficient to meet these increased demands. Furthermore, existing human capacity in the health sector is eroded by HIV/AIDS, which further compromises the ability of the Ministry to meet these demands.

Dwindling resources

Senior managers in the Ministry asserted that although the annual allocation of resources have increased over the years, in real terms resources have proved inadequate in relation to the ever increasing demand for health services. As a result, the services that are provided are both inadequate and poor.

Deteriorating working environment

The increased demand for health services coupled with the dwindling resources have led to a deteriorating working environment. Most medical personnel no longer find the hospital a

conducive work environment. As a result, most health personnel prefer working in the Ministry's headquarters rather than in the health facilities, which deliver services to the populace. This deteriorating environment has made recruitment of health personnel, especially nurses, difficult. It has also resulted in numerous resignations of nurses and medical officers.

Workplace interventions on HIV/AIDS

The MoHP does not have a workplace HIV/AIDS programme. However, service delivery institutions have HIV/AIDS programmes by virtue of being service providers. Service delivery institutions counsel their staff about HIV/AIDS and provide support to individuals in need. They run in-service education on HIV/AIDS and infection prevention practices. Anecdotal evidence from hospital staff indicates the programme has been a success. The key players at hospital level are nurses who include STI providers, HIV/AIDS coordinators and HIV/AIDS counsellors. They need financial support for training sessions. There is also a need to have a specific programme for health workers.

Conclusion

The findings of the study show that death is the largest cause of attrition in the MoHP. Most of those affected are between 30-39 years old. Yet, many of the human resource structures, systems and procedures for coping with attrition in general and HIV/AIDS deaths in particular are either not in place or appear in urgent need of repair and support. Increased mortality results in a decrease in the stock of skilled and experienced labour and leads to increased training and recruitment costs. Similarly, increased morbidity and absenteeism affect productivity and the performance of health workers. Because of inadequate communication between the centre (MoHP headquarters) and service delivery institutions, it is difficult for the authorities at the Ministry to see the impact of HIV/AIDS on services and take appropriate measures. MoHP headquarters do not have an HIV/AIDS prevention and support programme. Service delivery facilities have HIV/AIDS programmes by virtue of being service providers, but these have many limitations, including inadequate funding and lack of recognition for its activities by the majority of health officers.

4. MALAWI POLICE SERVICE (MPS)

Introduction

The Malawi Police Service (MPS) is responsible for maintaining law and order by providing internal security services of magnitude and quality necessary for peace and the protection of all people and their property through an effective, efficient and conscientious service. The main objectives of the Police Service are to:

- Maintain a well-trained, well-equipped, motivated and disciplined human resource to meet the required police to population ratio of 1:500.
- Provide a high quality service to all residents of Malawi focusing on the detection, prevention and investigation of crime, the reduction of incidents and fear of crime and the prosecution of offenders. This is achieved by regularly conducting patrols and sweeping operations, timely completing all prosecution and collecting criminal intelligence professionally;
- Ascertain that members of the public are reassured of their safety and security through the organisation of geographical patrols based on crime analysis.

Police Service Reforms

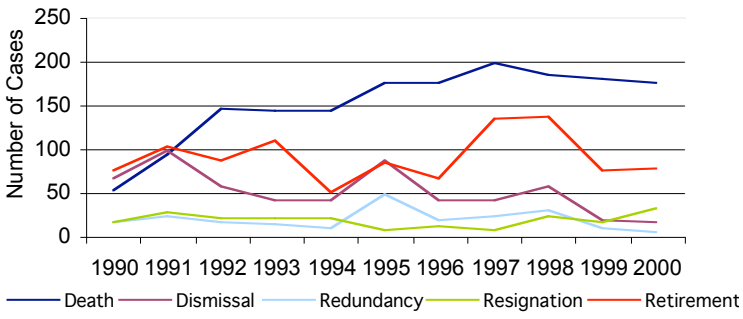
The Malawi Police Service has been undergoing an ambitious change process aimed at improving its service delivery to the people of Malawi and making it more accountable in all its activities. The change process is realised through the Police Reform Programme (see Appendix 7).

Attrition

General attrition

As Table 36 and Graph 19 show, general attrition in the MPS fluctuates throughout the decade. Attrition by death is the biggest cause of attrition in the MPS, followed by retirement. Dismissal was relatively high in 1990 and 1991, after which it fell consistently with small peaks in 1995 and 1998. Dismissal is reasonably high when one considers government investment in the initial training of police

Graph 19. Attrition by Cause in MPS, 1990-2000



officers. A possible explanation is that since the police are a disciplined force, any act of indiscipline would easily lead to dismissal. Redundancy peaked in 1995 whereas resignation is generally low throughout the 1990s.

Table 36. General Attrition by Cause and Year for MPS

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	*% of total*
Death	52	94	145	143	144	175	176	197	183	180	176	**1,665**	***46%***
Dismissal	67	98	56	40	42	87	42	42	57	18	16	**565**	***16%***
Redundancy	17	22	15	14	10	48	19	23	30	8	4	**210**	***6%***
Resignation	16	27	21	20	20	6	11	6	23	16	31	**197**	***5%***
Retirement	74	102	86	108	49	84	66	133	137	74	78	**991**	***27%***
Total	**226**	**343**	**323**	**325**	**265**	**400**	**314**	**401**	**430**	**296**	**305**	**3,628**	***100%***
Total staff in post	4,668	4,974	5,399	4,772	5,001	5,798	4,838	6,172	5,531	5,570	6,497	59,220	
Attrition rate	***4.8%***	***6.9%***	***6%***	***6.8%***	***5.3%***	***6.9%***	***6.5%***	***6.5%***	***7.8%***	***5.3%***	***4.7%***	***6.1%***	

Attrition by sex and age group

Table 37 shows death as a cause of attrition among men and women in different age groups. Most deaths in the MPS occur in the age group of 30-34 years old, followed by deaths in the 35-39 age group. The deaths in these age ranges account for 47% of total deaths. These age ranges consist of relatively new entrants and junior officers who are the hub of police activities. This situation has the potential of reducing the quality of work, distorting output levels and depriving the Police Service of future quality leadership. With 93% of all deaths occurring among men, it can be argued that they are disproportionately affected. However, this may be because most police officers are male. The majority of men who died were aged between 30-34 years, followed by men in the age group of 35-39 years. The majority of deaths among women (31%) occurred in the age group 30-34 years, followed by 25-29 years (24%). These trends coincide with the general finding that with HIV/AIDS, women start dying at a younger age than men.

Table 37. Death-Related Attrition by Sex and Age Group in MPS, 1990-2000

	20-24		25-29		30-34		35-39		40-44		45-49		50+		Total	
	f	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*	*f*	*m*
Total	7	31	28	232	36	386	25	324	13	232	2	155	7	170	**118**	**1,530**
*%**	*6%*	*2%*	*24%*	*15%*	*31%*	*25%*	*21%*	*21%*	*11%*	*15%*	*2%*	*10%*	*6%*	*11%*	*7%*	*93%*
Total	**38**		**260**		**422**		**349**		**245**		**157**		**177**		**1,648****	
% of total	*2%*		*16%*		*26%*		*21%*		*15%*		*10%*		*11%*			

f = female, m = male

* Percentages are based on totals by sex. Thus, deaths among women in the age group 20-24 years constituted 6% of total deaths among women.

** The total is less than the total in Table 37, because in some cases sex or age were not specified.

Attrition by occupational category

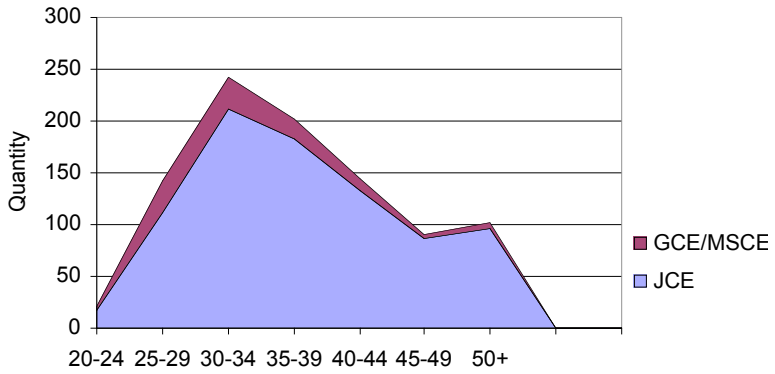
Standardised Mortality Ratios (SMRs) have been calculated to determine how mortality has affected various occupational categories in the Police Service in the 10 years under review. Table 38 indicates excess mortality among First Sergeants, Inspectors, Constables, Commissioners and Second Sergeants, with SMR values exceeding 100.

This could partly be explained by the fact that Constables and Second Sergeants are junior officers, whose work involves mobility and are posted away from home. Junior officers, especially Constables, are central to the implementation of any police strategy. Their disproportionate number of deaths will certainly affect the quality of services and the pace of reforms. The SMR for other positions in the MPS is below the mortality rate of the general population.

Table 38. Standardised Mortality Ratios for MPS Staff

Occupational Category	Expected Death	Observed Death	SMR
Constable	96.1	211	219
First Sergeant	10.4	28	269
2nd Sergeant	30.6	39	127
Inspector	5.1	12	235
Commissioner	0	2	200
Asst. Superintendent	4.4	0	0
S/Superintendent	26.6	3	11
D. C. P.	0.2	0	0
S.A.C.P	50.2	0	0

Graph 20. Deaths by Qualification in MPS, 1990-2000



Further analysis of deaths by qualification (Graph 20) reveals a high number of deaths (839 in total) among those with a junior certificate. Of these, the majority are between 30-34 years old

(25%), followed by the age group 35-39 years old (22%) and 40-44 years old (15%). The second highest numbers of deaths occur among those holding a GCE/MSCE certificate, of which half are between 25-34 years old. Deaths are negligible among those holding diplomas (1 death recorded) and first degrees (1 death recorded), probably because the Police Service has very few holders of diplomas and degrees.

HIV/AIDS-related mortality

The causes of death are indicated in the personal files of the dead and are shown in Table 39. In a large number of cases, the cause of death was not recorded. A considerable number of deaths are recorded as long illness (355).

Table 39. Listed Causes of Deaths of MPS Staff

Cause Of Death	Number	HIV/AIDS Signs*
Unknown	406	
Long illness	355	
Cerebral Malaria	7	
Diarrhoea	5	✓
Tuberculosis	47	✓
Asthma	6	
Short illness	18	
Kaposis Sarcoma	2	✓
Anaemia	1	✓
Body boils	5	✓
Swollen legs	5	✓
Chest Sores	1	✓
Chronic Fever	1	✓
Paralysis	2	
Open bowels	1	✓
Chronic kidney disease	1	
R. T. A.	2	
Severe headache	1	
Continuous Shivering	1	
Hymphoedema	1	
Brain Surgery Complication	1	
Malaria	1	
Meningitis	1	✓
Aids related Condition	7	✓
Stroke	1	
Athropathies	1	
Renal Failure	1	
Pneumonia	2	✓

* As recognised by the MOHP

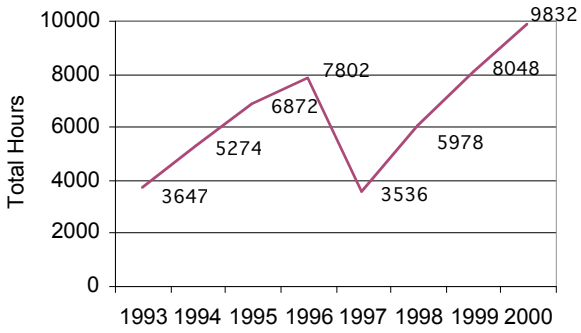
As mentioned before, many HIV/AIDS-related deaths are logged in medical records as tuberculosis, diarrhoea or pneumonia. This makes it difficult to properly appreciate the relationship between HIV/AIDS and the death of police officers. Table 26 also indicates which diseases can be symptoms or signs of HIV/AIDS, as noted by the NAC. It shows that 16% of all known causes of death (477 in total) concern diseases that can be signs of HIV/AIDS. This corresponds with information from the Police Hospital in Zomba, where most police officers die, which indicates that 16% of annual deaths at the hospital are as a result of HIV/AIDS-related illness.

Extrapolating this percentage to the 1,665 officers who died in the period under review suggests that 266 officers might have died of HIV/AIDS. Moreover, HIV/AIDS is the only explanation for the excess mortality indicated in Table 38.

Morbidity and absenteeism

In contrast to other Ministries, absenteeism in the Police Service is recorded. Rigorous absenteeism handling regulations probably help to explain why it is rare for officers to absent themselves from work. Discussions with senior police officers at MPS headquarters revealed that there were minor incidences of absenteeism with sickness being the main reason, followed by funeral attendance and attending to sick people. All sections at MPS headquarters noted the number of officers on sick leave. On average, each functional area had one officer who was on sick leave. Almost all departments at MPS headquarters noted chronically ill police officers, some of who were on sick leave.

Graph 21. Time Lost Due to Morbidity in MPS, 1993-2000



The MPS does not keep information on the loss of productivity as a result of absenteeism due to HIV/AIDS. Graph 21 reflects the trend in the number of hours lost due to absenteeism at Zomba Police Hospital as a result of sickness between 1993 and 2000. It shows that morbidity increases consistently between 1993 and 1996. It drops significantly in 1997, only to rise again to very high levels in 2000. The graph shows that a total of 50,989 hours of productivity were lost in 8 years. This translates to 6,374 days, or 290 months. This implies that an average of 36 months of productivity are lost per annum. Since the main cause of absenteeism is morbidity, increased absenteeism is a proxy for increased morbidity in the MPS.

Vacancy analysis

The MPS has had trained personnel shortages for many years. An assessment of vacancy levels in the MPS shows that there has consistently been a high vacancy rate among Recruits (Table 40). Given that Recruits are trained to become Constables, who perform central tasks of the Police Service, high vacancy levels among this category may disrupt the effective delivery of services. There are also significant vacancies at senior officer level, for example in the staff categories of Commissioner and Deputy Commissioner. Senior positions in the MPS are based on promotion rather than direct recruitment. Thus, vacancies at this level may raise questions about the effectiveness of the promotion system and could suggest inadequate

succession planning. Vacancies in the MPS have the potential to negatively affect the pace and quality of Police Service Reforms.

Reasons for these vacancies are varied and include staff turnover and inadequate funding to undertake large-scale recruitment. Deaths among police personnel will also have contributed to these vacancies. The protracted and time-consuming recruitment process is also a considerable factor. According to police officers, it can take over 12 months to fill a vacancy at junior officer level (i.e. Recruit/Constable position).

Table 40. Vacancy Levels for MPS Staff, 1992 –2000

Functional group / staff category	1992		1996		1998		2000	
	Deficit	*Vacancy rate*	*Deficit*	*Vacancy rate*	*Deficit*	*Vacancy rate*	*Deficit*	*Vacancy rate*
Inspector General	0	0	0	0	0	0	0	0
Deputy Inspector General	0	0	0	0	0	0	0	0
Commissioner	0	0	5	63%	4	50%	4	50%
Deputy Commissioner	0	0	4	36%	1	9%	4	36%
Sr. Asst. Commissioner	2	20%	0	0	0	0	1	5%
Asst. Commissioner	0	0 %	33	52%	9	14%	4	6%
Superintendent	0	0%	18	23%	6	8%	19	24%
Asst. superintendent	23	17%	35	27%	10	8%	8	6%
Inspectors	0	0	64	32%	78	38%	64	32%
Sub – inspectors	0	0	61	21%	3	1%	45	11%
Second Sergeant	19	3%	25	4%	0	0	0	0
Constables	10	0.3%	611	17%	0	0	0	0
Recruits	696	56%	1,691	85%	1,786	89%	1,092	55%

Workload analysis

Table 41. Police Personnel to Population Ratio, 1992-2000

	1992	1996	1998	2000
Police officer : population	1 : 1,681	1 : 2,200	1 : 1,779	1 : 1,539

The workload of the MPS is based on a calculation of the ratio between police officers in post and the general population of Malawi. The recommended national standard is 1 police officer to 500 citizens. However, as Table 41 shows, throughout 1992 to 2000 the ratio has been much higher. This suggests a high workload of police officers, which is exacerbated by the fact that crime has become increasingly sophisticated. Deteriorating complimentary resources further compound this situation.

Impact on productivity and performance

HIV/AIDS-related morbidity and mortality reduces the number of police officers and leads to a loss of skills and experience. This reduces human capital, which could ultimately cut

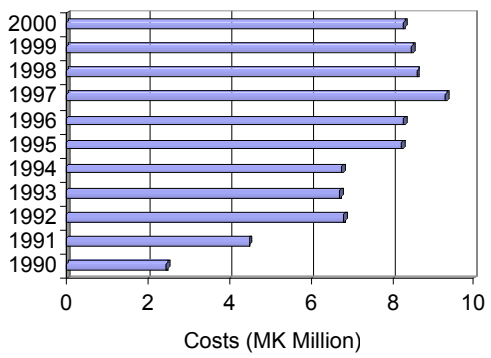
productivity. The Police Service is particularly vulnerable to increased morbidity and mortality, because it is labour intensive. This is compounded by the fact that the intake of low-level police officers in training schools is small. All in all, the impact on productivity and performance will be similar to those discussed in relation to other Ministries.

Financial implications

The MPS does not calculate the costs of HIV/AIDS-related morbidity and death costs. However, it was able to provide estimates for funeral costs. The MPS has financial obligations to police officers who have died, particularly in relation to funeral costs. The MPS deducts monthly contributions from every police officer, which goes into a welfare fund that caters for funerals. The rank of a police officer determines their monthly contribution, with each higher rank contributing MK 5.00 more. For example, a Constable contributes MK 10.00 and a Second Sergeant MK 15.00. In addition to the money accumulated through salary deductions, wives of police officers also make a monthly contribution through the women's welfare committee. The amount increases by MK 10.00, depending on the rank of the police officer. Thus, wives of junior officers contribute MK 30.00, whereas wives of Inspectors contribute MK 50.00. These contributions are used to pay for fuel expenses.

The funeral costs borne by the MPS include the cost of a coffin, wreaths (normally 3), transport (usually one lorry or two land rovers), and accommodation for officers attending burial ceremonies, and a per-diem for welfare officers on duty and drivers. The Welfare Committee will normally contribute towards food and a blanket for the wife of the deceased. Unlike in the other organisations studied, the Welfare Committee helps in reducing the financial burden of funerals on the MPS.

Graph 22. Funeral Costs for MPS



As Graph 22 shows, funeral costs have increased steadily from 1992 to 1997, when they reach their highest level. The costs, calculated at current prices, start falling marginally in 1998. From 1998, the costs stabilise somewhat. The graph shows that a significant amount of MPS resources is spent on funeral costs each year. These resources could otherwise have been used to provide effective police services.

Impact on service provision

Overall, increased morbidity and mortality will have a disastrous impact on the MPS and its capacity to deliver services to the community. Furthermore, the diversion of financial resources to respond to increasing mortality in the MPS also undermines the capacity of the Police Service to deliver quality services. The capacity erosion in the MPS will consequently jeopardise security in the country, which is critical in a democracy.

Institutional vulnerability to HIV/AIDS

Factors influencing the institutional vulnerability of the MPS to HIV/AIDS include its human resource planning capacity, specific human resource policies and their implementation, and its HIV/AIDS workplace programme.

Human resource planning capacity

The MPS has Human Resource Management and Development Department and a Human Resource Planning Department. Yet, formal human resource planning is not done in the Police Service. This study has highlighted similar trends in relation to other Public Sector organisations.

Human resource policy and implementation

However, the MPS' vulnerability to HIV/AIDS differs from other Public Sector organisations in significant respects. Firstly, in contrast to most other organisations, the MPS actually keeps absenteeism records. However, its absenteeism management system lacks back up systems. Secondly, the retirement policy for policy officers differs from the retirement policy in the civil service. A police officer may retire at the age of 60 years, after ten years pensionable service, or at the age of 45, after ten years pensionable service and with the Minister's consent.

Workplace interventions on HIV/AIDS

The MPS has an ongoing HIV/AIDS Programme. The objectives of this programme are:

(a) To raise awareness among police officers, their spouses and children on HIV/AIDS;
(b) To break the silence related to HIV/AIDS so that people, parents and children share experiences, ideas and knowledge on HIV/AIDS;
(c) To bring about behavioural change on sex and sexuality in the police community and in schools.

The HIV/AIDS Programme has trained two groups of peer educators, one comprising 20 police officers and the other 20 spouses, and one group of Home Based Care Providers. The members of staff involved in this programme occasionally visit schools on scheduled times. The Police Youth Organisation assists in disseminating messages through songs, poetry, drama and dance. Previously, outreach stations were also visited to discuss the issue of HIV/AIDS with officers and their spouses. However, this programme did not continue because of lack of transport and support.

Additional problems experienced by the HIV/AIDS Programme are that only a few members of staff have shown interest and most officers have found it difficult to combine normal duties with the HIV/AIDS Programme. Consequently, clients wishing to be counselled are not always assisted at that particular time. In addition, very few people come forward for voluntary testing for HIV/AIDS. This shows that there is still fear in the MPS concerning HIV/AIDS testing. Furthermore, HIV/AIDS is still largely considered as a hospital problem, despite the number of trained peer educators. Finally, not all trained peer educators are active.

Conclusion

This study has shown that death is the largest cause of attrition in the MPS. The majority of deaths occur among male police officers between the ages of 30-39 years old. Absenteeism due to morbidity has also increased during the period under review. Yet, many of the human resource systems and procedures needed to deal with attrition, increased morbidity and associated cost implications are not in place or in need of urgent revision. It is clear that HIV/AIDS morbidity and death are not taken into account in any planning, let alone in formal human resource planning. The fact that the MPS has an HIV/AIDS Programme is significant. However, it is experiencing various problems that hinder its effectiveness. This points to the need to strengthen it.

5. THE MINISTRY OF WATER DEVELOPMENT (MOWD)

Introduction

The Ministry of Water Development (MoWD) exists to "ensure that every Malawian individual and entrepreneur has equitable access to water at all times for social welfare and the country's sustainable economic growth and prosperity". The Ministry's specific objectives are to:

- Identify, develop and conserve water resources in the country for use by all sectors;
- Monitor and assess the available water resources in the country;
- Advise the actions of Ministries and other actors concerning water;
- Ensure that all citizens of Malawi have and will continue to have a convenient access to water in sufficient quantity and domestic use;
- Promote and develop health hygiene at water points, safe water-borne sanitation and industrial waste disposal, in order to preserve people's health and water quality.

The Ministry implements its programmes in a decentralised manner through Regional and District offices. A summary of its structure and operations can be found in Appendix 8.

Situation analysis

Discussions with senior officers in the Ministry revealed that the MoWD faces numerous challenges. These include: low access to potable water, especially in rural areas; significant degradation of water resources; and, a lack of human resource capacity in the water sector to effectively tackle the existing challenges. Based on these challenges and the strategic objectives outlined above, the priorities for the Ministry are: improved delivery of water and sanitation services, promotion of proper water resources management for sustainable utilisation, and water resources conservation.

Attrition

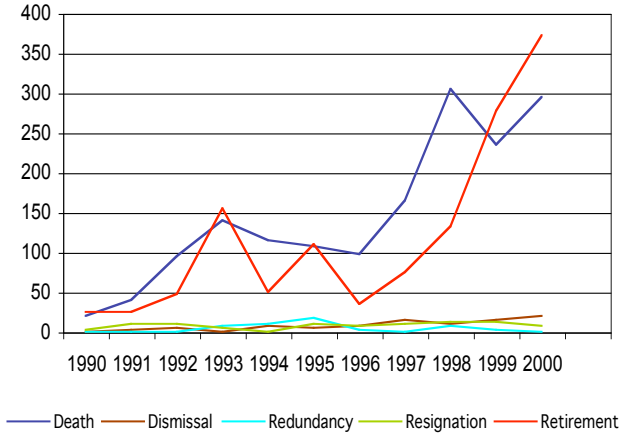
General attrition levels

Between 1990 and 2000, 938 employees left the MoWD (see Table 42). In absolute terms, general attrition peaked in 1996, after which it declined. Death is the highest cause of attrition (over 40%), followed by redundancy (29%) and retirement (25%). In 2000, the Ministry experienced on average 3 deaths per month.

Table 42. General Attrition by Cause and Year for MoWD

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	%
Death	4	11	34	38	33	52	45	52	45	31	35	380	***40.5%***
Dismissal	1	5	1	1	1	0	3	1	1	4	1	15	***1.6%***
Redundancy	1	2	2	13	5	49	1	12	185	4	1	275	***29.3%***
Resignation	0	5	4	10	5	4	1	2	3	1	0	35	***3.7%***
Retirement	6	3	10	61	10	14	13	11	58	23	24	233	***24.8%***
Total	12	26	51	123	54	119	63	78	292	59	61	938	***99.9%***
Total Staff in Post	214	472	426	428	731	737	844	641	623	609	517	6,242	
Attrition rate	*5.6%*	*5.5%*	*11.9%*	*28.7%*	*7.4%*	*16.1%*	*7.5%*	*12.2%*	*46.9%*	*9.7%*	*11.8%*	*15%*	

Graph 23. Attrition by Cause and Year in MOWD



Graph 23 reflects the trends in attrition in graphic form. It clearly depicts an increasing trend of attrition, especially in deaths and retirements. In 1993, the government strictly enforced the policy to retire all those who had reached the mandatory retirement age. This explains the peak in retirements in 1993. Redundancy was very high in 1998, when some of the responsibilities of the Ministry were reassigned to the newly created regional Water Boards. A number of staff retired to join the Water Boards.

Table 43 shows attrition as a ratio of the number of employees in post during each respective year. It shows a disproportionately high attrition rate in 1998, when close to half of all MoWD employees left the Ministry for various reasons, mainly because of redundancy. The death rate peaked in 1993 at 8.9%, after which it has been fairly erratic.

Table 43. General Attrition as a Ratio of Staff in Post by Cause and Year for MoWD

Cause	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Death	1.9%	2.3%	8%	8.9%	4.5%	7%	5.3%	8%	7.2%	5%	6.8%
Dismissal	0.5%	1%	0.2%	0.2%	0.1%	0%	0.4%	0.2%	0.2%	0.7%	0.2%
Redundancy	0.5%	0.8%	0.5%	3%	0.7%	6.6%	0.1%	1.9%	29.6%	0.7%	0.2%
Resignation	0%	2.3%	0.9%	2.3%	0.7%	0.5%	0.1%	0.3%	0.5%	0.2%	0%
Retirement	2.8%	0.6%	2.3%	14.3%	1.4%	1.9%	1.5%	1.7%	9.3%	3.8%	4.6%
Total	**5.6%**	**5.5%**	**11.9 %**	**28.7 %**	**7.4%**	**16.1 %**	**7.5%**	**12.2 %**	**46.9 %**	**9.7%**	**11.8 %**

Attrition by sex and age group

Women between 30-34 years old were the most affected by attrition in the MoWD, followed by women between 25-29 years old (see Table 44). The percentage has been calculated as a proportion of the total number of women that left the service. For men, attrition rates are particularly high from 30 years onwards. For both sexes combined, attrition is highest in the age group of 30-34 years old. In the absence of data disaggregated by age and gender of staff in post in respective years, it has not been possible to calculate attrition rates in relation to the total number of employed men and women by age group.

Table 44. Attrition by Sex and Age Group in MoWD (915 records)

	20-24		**25-29**		**30-34**		**35-39**		**40-44**		**45-49**		**50+**		**Total**	
	f	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***
Total attrition	6	15	23	74	39	152	8	161	6	130	4	116	3	178	**89**	**826**
*% of total**	*6.7 %*	*1.8 %*	*25. 8%*	*8.9 %*	*43. 8%*	*18. 4%*	*9%*	*19. 5%*	*6.7 %*	*15. 7%*	*4.5 %*	*14 %*	*3.4 %*	*21. 5%*	***9.7 %***	***90. 3%***
Total	21		97		191		169		136		120		181		**915**	
% of total	*2.3%*		*10.6%*		*20.9%*		*18.5%*		*14.9%*		*13.1%*		*19.8%*		***100%***	

f = female, m = male

* This has been calculated as the proportion of the total number of women and men respectively who have left the MOWD.

Table 45 shows mortality rates among men and women of different age groups in the MoWD. It shows that the highest death rate among women occurred in the 30-34 age group (44.4%), followed by the 25-29 age group (25.9%). For men, the highest death rate is recorded in the age group 40-44 (23.6%), followed by the age group 35-39 (22%). Over three quarters of all deaths (78%) occurred among adults (men and women combined) between 20-44 years old.

Table 45. Death-Related Attrition by Sex and Age Group in MoWD (341 records)

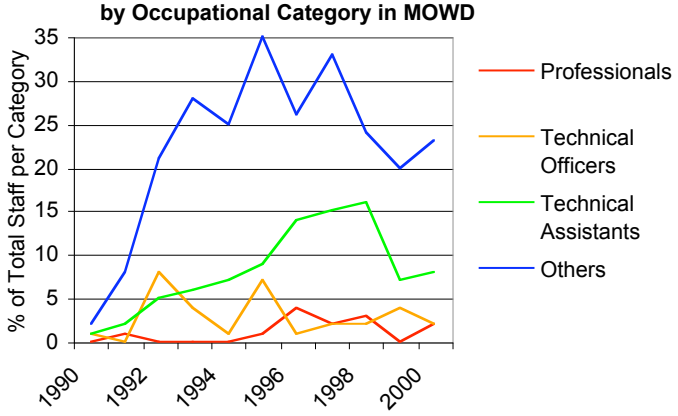
	20-24		**25-29**		**30-34**		**35-39**		**40-44**		**45-49**		**50+**		**Total**	
	f	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***	***f***	***m***
Death-related attrition	1	5	7	33	12	59	3	69	4	74	0	39	0	35	**27**	**314**
*% of deaths**	*3.7 %*	*1.6 %*	*25.*	*10. 5%*	*44.*	*18. 8%*	*11.*	*22 %*	*14.*	*23. 6%*	*0%*	*12. 4%*	*0%*	*11. 1%*	***7.9 %***	***92. 1%***
Total	**6**		**40**		**71**		**72**		**78**		**39**		**35**		**341**	
% of total	***1.8%***		***11.7%***		***20%***		***21%***		***22.9%***		***11.4%***		***10.3%***		***100%***	

f = female, m = male

* This has been calculated as the proportion of the total number of deaths among women and men respectively.

Attrition by occupational category

Graph 24. Death-Related Attrition Rates by Occupational Category in MOWD



As Table 42 showed, death is the highest cause of attrition in the MoWD during the period under review. Graph 24 depicts the trends of death-related attrition among various occupational categories in the Ministry. The category 'others' is significantly greater than the other categories, which creates a distorted picture if compared with the other categories. This category includes Wells/Borehole Maintenance Overseers and support categories such as Accounts personnel, Human Resources Officers, and Administrators. As Graph 24 shows, deaths among professionals were relatively low. Deaths of Technical Assistants peaked in the mid-1990s, after which a significant drop is noted.

Graph 24 does not show the death rate as a proportion of the total number of staff in post for each occupational category. This information can be found in Table 46 for selected years. When this information is included, the picture changes quite a bit. For example, it shows that the death rate among professionals shot up significantly in 1996. It reached its highest peak to date in 1998 with 8.6%, after which it dropped to 0% in 1999. In that same year, the death rate among Technical Officers averaged one in ten (10.5%). This shows, that unlike other categories, deaths among Technical Officers are on the increase – a trend that is not revealed in Graph 22.

Table 46. Death Rates by Occupational Category for MoWD Employees for Selected Years

	1990			1993			1996			1999		
Occupation	**In post**	**Dead**	***Rate***	**In post**	**Dead**	***Rate***	**In post**	**Dead**	***Rate***	**In post**	**Dead**	***Rate***
Professional	32	0	*0%*	43	0	*0%*	52	4	*7.7%*	49	0	*0%*
Technical Officer	51	1	*1.7%*	61	4	*6.5%*	46	1	*2.2%*	38	4	*10.5 %*
Technical Assistant	96	1	*1%*	120	6	*5%*	490	14	*2.9%*	287	7	*2.4%*
Other	35	2	*5.7%*	204	28	*13.7 %*	256	26	*10%*	235	31	*13%*

Because death rates vary quite substantially in different years, the Standardised Mortality Ratios (SMR) for various occupational categories are calculated (see Table 47). The Table shows excess mortality (over 100) among all occupational categories, with the highest SMR

value among the occupational category characterised as 'other'. Qualitative discussions with officers in the Ministry revealed that most of the people who were dying in this category were Wells/Borehole Maintenance Overseers and those whose work involves mobility. The Table further shows that Technical Officers experience extremely high excess mortality, which is over five times the national mortality rate, followed by Technical Assistants and Professionals.

Table 47. Standardised Mortality Ratios for MoWD Staff

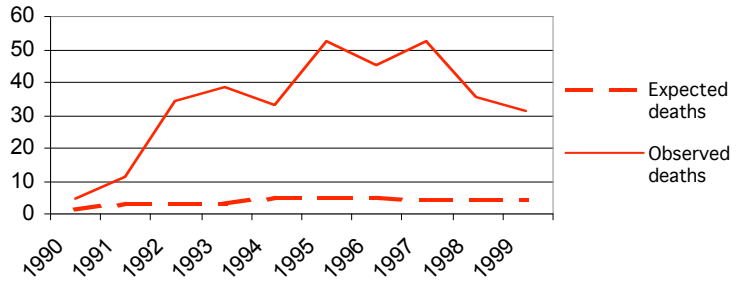
Occupational category	Expected Death	Observed Death	SMR
Professional	4.5	13	288
Technical Officer	5.8	32	552
Technical Assistant	28.2	90	319
Other	25	245	980

HIV/AIDS-related mortality

As stated earlier, linking deaths to HIV/AIDS retrospectively is not only a daunting exercise, but it also has limitations. What is presented in this section is an estimation of the people who might have died of HIV/AIDS using some proxies.

The first proxy that is used to estimate the HIV/AIDS-related deaths is the incidence of Tuberculosis (TB). Information from personnel files indicates that seven officers died of TB. Based on the national estimate that 77% of TB patients are also HIV positive, it can be argued that five of these have died of HIV/AIDS. Long illness is used as a second proxy. Long illness is indicated in 75 cases of death. Thus, we can infer that 80 (21%) out of 380 MOWD employees who have died during the period under review may have died of HIV/AIDS.

Graph 25. Observed and Expected Deaths in MOWD



A comparison between observed and expected deaths reveals that between 1990 and 1999 the MoWD was affected by 308 excess deaths. HIV/AIDS is the only explanation for these excess deaths. This tallies with comments from the majority of officers, who said that they suspected that more than half of the deceased had died of

HIV/AIDS. It also corresponds with reports from the Ministry of Health and Population (MOHP) that HIV/AIDS patients occupy over 60% of the beds in government hospitals, which is where the majority of civil servants go. As Graph 25 shows, there is a very wide gap between expected and observed deaths in the MoWD. This is an indication that most deaths are HIV/AIDS-related.

Table 48. Estimation of HIV/AIDS-Related Deaths in MoWD

Year	NACP % of AIDS cases among professionals	Total Deaths	Possible AIDS cases
1995	11.8%	52	6
1996	9%	45	4
1997	9.7%	52	5
1998	9.6%	45	4
1999	9.6%	31	3
2000	9.6%	35	3
Total	***9.6%***	**260**	**25**

As Table 48 shows, based on the NACP statistics of AIDS cases among professionals it is estimated that 25 deaths in the MoWD between 1995 and 2000 may have been HIV/AIDS-related. During these six years, 9.6% of all death cases are likely to have been caused by HIV/AIDS. If this is applied to the total number of deaths in the MoWD during the whole period under review, we find that 37 MoWD employees may have died of HIV/AIDS. This is likely to be a serious underestimation, given the high number of excess deaths in the Ministry.

Morbidity and absenteeism

In the absence of a system to record absenteeism and morbidity in the MoWD, this study draws on qualitative discussions with Ministry officials. These discussions confirmed that there are incidences of morbidity in the Ministry where officers are repeatedly sick. Also, there are cases of prolonged illnesses. It was stated that some employees suffer from diseases like malaria, tuberculosis and certain skin conditions. However, exact numbers could not be established.

Similarly, it was suggested that absenteeism does occur, although there is no system for recording absenteeism and why people absent themselves from work. According to supervisors, however, both male and female employees absent themselves mostly due to their own illness. Looking after the sick, attending funerals, attending to personal matters and lack of money for transport were other stated reasons for absenteeism among female employees. For men, other reasons given included attending funerals, mere laziness among junior staff, doing private consultancies among senior staff and lack of transport money. It was further

stated that the issue of salary differentials between senior staff, who are on contract, and other employees has demoralised a number of officers who are not on contract. As a result, many of these officers do not do much even when they are physically in the office.

In the absence of exact data, HIV/AIDS-related morbidity levels in the Ministry can be calculated by applying the national prevalence rate of 16% to the total number of staff in post. In 2000, 83 out of 517 employees are likely to have been HIV positive. Of these three are likely to have died of HIV/AIDS (see Table 48). Preceding their death, absenteeism of these three officers is likely to have amounted to 195 days. Absenteeism due to ill health of the remaining 80 employees is expected to have amounted to 1,200 days. Thus, in 2000 HIV/AIDS-related morbidity is likely to have cost the Ministry 1,395 productive days, or 63 months.

Vacancy analysis

The Ministry has been characterised by very high vacancy rates since 1995 (see Table 49). In 1995, the overall vacancy rate in the Ministry was 18%. By 1999, this had tripled to 52%. The staff groups most affected are Civil/Water Engineers, Water Assistants and Water Supervisors. Vacancy rates among Hydrologist and Hydro-geologists have decreased over time, in contrast to vacancy rates among Management and Support Staff.

Table 49. Vacancy Levels for MOWD Staff, 1995-1999

Occupational Category	1995				1997				1999			
	Posts	Filled	Vacancy	%	Posts	Filled	Vacancy	%	Posts	Filled	Vacancy	%
Hydrologist	14	9	5	*33 %*	14	10	4	*29 %*	14	10	4	*29%*
Hydro-geologists	15	8	7	*47 %*	15	12	3	*20 %*	15	12	3	*20%*
Civil/Water Engineers	35	17	18	*51 %*	35	11	24	*69 %*	35	16	19	*54%*
Water Supervisors	31	12	19	*61 %*	31	11	20	*65 %*	31	18	13	*42%*
Water Assistants	200	178	22	*11 %*	269	107	162	*60 %*	364	123	241	*66%*
Management	23	19	4	*17 %*	22	18	4	*18 %*	21	14	7	*33%*
Support Staff	192	175	17	*9%*	154	132	22	*14 %*	194	129	65	*34%*

Vacancies and HIV/AIDS

A comparison between the vacancy analysis and the analysis of deaths among various occupational categories indicates that deaths may have contributed to vacancies among

Technical Officers, Technical Assistants and support staff. According to discussions with the MoWD, the main cause of vacancies among Civil/Water Engineers is resignation, while vacancies among Hydrologists and Hydro-Geologists are largely caused by a lack of resources to train people. Optional retirement is also a major cause of attrition in the Ministry.

Coping strategies

The Ministry has adopted various coping strategies to deal with the high vacancy levels. These include giving additional work and responsibilities to existing staff, contracting out to the private sector and engaging consultants to carry out short-term exercises.

- Utilising existing staff

Although the Ministry has a decentralised structure, many of its positions at regional and district level are understaffed. It was reported that district offices are currently staffed by Technical Assistants, who are doing the work of Professionals.

- Contracting out

In areas where the Ministry has no capacity, like borehole drilling, activities are contracted out to the private sector. In these instances, the Ministry plays a supervisory role.

- Use of consultants

It was stated that, with the help of donors, the Ministry sometimes engages consultants to carry out short-term assignments in areas where capacity is lacking.

Workload analysis

It was reported that vacancies result in increased workload, especially at lower levels of the Ministry where most of the operations are undertaken. Increased workload is also very high among Engineers, particularly because they are very few in the Ministry. Currently, Engineers are based at Ministry headquarters whilst having to take care of the operations in the field as well.

Impact on productivity and performance

Table 50 attempts to calculate the loss of productive time and replacement costs in the case of death-related attrition in the MOWD. Loss of productive time is derived from subtracting the age at death from the mandatory retirement age. It shows that the death of these eight employees amounts to 158 years of lost productivity.

Table 50. Loss of Productivity through Death in MoWD

Level of Training	Number of Dead Officers	Total Years of Lost Productivity
Masters Degree	3	49
Bachelors Degree	5	109
Total	8	158

Financial implications

Financial implications include the replacement costs of deceased officers (training and recruitment), the cost of absenteeism and funeral costs.

Training and recruitment

Based on information in Table 50, it is possible to calculate the cost of replacement of the three employees with a Masters degree. This is estimated to be at least US$ 87,519, the equivalent of MK 5,426,178. This is calculated on the basis of a two-year programme in the United Kingdom with retention of salary, training allowance, upkeep and tuition, amounting to US$ 29,173 per person (see also Table 22 on the training costs in the MoAI). It is more difficult to calculate replacement costs for people holding Bachelors degrees, because these costs are not borne by the Ministry. Because of a lack of relevant data, recruitment costs could not be calculated.

Table 51. Cost Implications of Absenteeism in MoWD, 1990-2000

Occupational Category	Number Died	Possible AIDS cases	Total Days Absent	Total Months Lost*	Average Salary/Month	Total Salary Paid
Professional	13	8	640	29	MK 4 000	MK 116,000
Technical Officer	32	19	1,520	69	MK 3,000	MK 207,000
Technical Assistant	90	54	4,320	196	MK 2,000	MK 392,000
Other	245	147	11,760	535	MK 2,000	MK 1,070,000
Total	**380**	**228**	**30,400**	**1,381**	**MK 11,000**	**MK 1,785,000**

* A month has been calculated on the basis of an average of 22 working days.

Cost of absenteeism

Table 51 is an attempt to estimate the cost of HIV/AIDS related absenteeism based on the number of employees who died of HIV/AIDS. This is calculated using the AIDSCAP estimation that prior to death each person who died of HIV/AIDS was absent from work for

65 days. With a potential number of 37 AIDS deaths in the Ministry since 1990, absenteeism translates into 74 months. At an average salary of MK 3,000, this means that absenteeism resulting in HIV/AIDS-related deaths comes at a cost of MK 222,000 to the Ministry.

As suggested before, in 2000 83 MoWD employees are likely to have been HIV-positive, of which three resulted in death. Using the same calculations as before, the total cost of absenteeism for these 83 employees is estimated to have amounted to MK 189,000 (for 63 months).

In reality, the costs are likely to be significantly higher, because those who are currently living with HIV/AIDS and are regularly absent from work are not included in this calculation. It also excludes absenteeism caused by looking after other people living with HIV/AIDS. Furthermore, the exact number of people who have died of HIV/AIDS is likely to have been higher.

Absenteeism due to funeral attendance of MoWD employees also amounts to significant monetary costs (see Table 52). These costs are calculated based on an average attendance of 20 employees for at least two days per funeral. The Table shows that the Ministry may have spent over MK 2,000,000 on salaries for what could be considered unproductive time of its employees.

Table 52. Cost Implications of Funeral Attendance in the MoWD, 1990-2000

Total Number of Dead	Total Funeral Attendees	Total Number of Days Lost	Total Number of Months Lost*	Average Salary / Month	Total Salary Lost
380	7,600	15,200	690	MK 3,000	MK 2,070,000

* A month has been calculated on the basis of an average of 22 working days.

Funeral costs

The Ministry does not keep a record of how much it has spent on funerals over the past ten years. It is estimated that the cost of a coffin is between MK 5,000 to MK 30,000. Most of the coffins acquired by the Ministry are in the range of MK 15,000 each. Ministry officials suggested that more costs are incurred for transport. The accounts department indicated that on average the Ministry spends between MK 10,000 and MK 15,000 on fuel when it concerns a burial within the central region, MK 20,000-30,000 when the burial takes place in the northern region and MK 30,000-40,000 when it occurs in the southern region. This cost increases when a senior officer dies, because more officers, including those from regional

offices, attend their burial ceremonies. When it concerns the funeral of a senior officer (of grade P4 and above), it was estimated that a minimum of MK 50,000 is spent. In one reported instance, up to MK 100,000 was spent on transport costs. In addition to the cost of coffins and transport, there is also the cost of transporting the family and the belongings of the deceased to her/his home village.

Impact on service provision

In the context of already high vacancy levels, HIV/AIDS-related absenteeism and vacancies only serve to exacerbate current problems. For example, it was reported that most piped water systems in rural areas broke down some time back. They are supposed to be redesigned and reconnected by Engineers, but the large number of vacancies has resulted in serious capacity deficiencies. It was also stated that plans to transfer the maintenance of water systems to the rural communities couldn't be implemented, because there is no capacity in the Ministry to provide the necessary training to rural communities. Even the collection of hydrological data, used by several other organisations including the MoAI, has been hampered by the lack of staff, transport and funding. Lack of this data impairs the ability of organisations to plan for effective service provision.

Similarly, the current human resource capacity constraints lead to delays in programme implementation. For example, under the Heavily Indebted Programme Countries (HIPC) Initiative, five piped water projects have been approved. However, due to limited capacity in the Ministry only three projects will be implemented.

Institutional vulnerability to HIV/AIDS

Various factors increase the vulnerability of the MoWD to the impact of HIV/AIDS. These include the failure to attract and retain professional staff, lack of resources for training, and administrative constraints to recruitment. These factors result in a situation where the lost capacity in the Ministry due to HIV/AIDS-related morbidity and mortality cannot easily be replaced.

Failure to retain professional staff

Poor remuneration packages, lack of incentives and lack of career prospects have undermined the ability of the Ministry to attract new graduate Engineers and retain those who are in service. Since the pool of Engineers on the market is small, the Ministry has been competing

with the private sector in recruiting Engineers. In the past, most new recruits resigned after working for a short time for the Ministry and went to greener pastures. For example, only two out of the six Engineers that were recruited in 1998 are reportedly still in the service.

Lack of resources for training

The prospect of training was one of the main factors that previously attracted professionals to join the Ministry. Since training opportunities have diminished, due to unavailability of funds in the Ministry and a lack of scholarships from the DHRMD, most professionals are not motivated to stay on. Lack of training opportunities has particularly affected Hydrologists and Hydro-Geologists, because they cannot be in those professions without the required training that is only obtained outside the country. Management in the Ministry stated that it is difficult to have a human resource development plan because scholarships from DHRMD are not as consistent as they used to be in the 1980s.

Administrative Constraints to recruitment

It was also stated that the ban on recruitment and long recruitment procedures cause serious delays in filling certain vacancies. An official from the Civil Service Commission confirmed that their procedures are indeed long: on average, it takes a minimum of six months to fill a vacancy.

Workplace interventions on HIV/AIDS

The MoWD, with the assistance of NAC, recently initiated an HIV/AIDS workplace programme. However, this is still in its infancy stage. The initial sensitisation programme for all Heads of Departments and senior managers enabled them to appreciate the need to mainstream HIV/AIDS in all their programmes and activities. In future, such a programme can help to mitigate the institutional vulnerability of the MoWD to HIV/AIDS.

Conclusion

The findings in the MoWD indicate that death is the main cause of attrition during the period under review. Deaths occur mostly among young adults between 20-44 years old, which is considered the most productive age group. The findings further show that women start dying at an earlier age than men. All cadres in the Ministry have experienced excess mortality with Technical Officers topping the list. In addition to high mortality, the Ministry is affected by increasing incidences of morbidity and absenteeism, both of which can only be explained in terms of HIV/AIDS.

6. THE IMPACT OF HIV/AIDS ON THE PUBLIC SECTOR: A CROSS-SECTORAL COMPARISON

This section compares the findings related to the various Ministries and attempts to extract general trends relevant to the Malawi Public Service.

Table 53. Total Staff in Post for Selected Ministries, 1990-2000

Ministry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MOEST	22,208	25,061	28,205	31,224	48,245	53,000	51,083	46,813	50,312	56,273*	62,234
MOAI	6,136	6,163	6,247	6,399	6,269	6,336	6,240	7,372	7,272	7,214	7,275
MOHP**	-	-	-	-	-	-	13488	13744	14718	15163	15622
MPS	4,668	4,974	5,399	4,772	5,001	5,798	4,838	6,172	5,531	5,570	6,497
MOWD	214	472	426	428	731	737	844	641	623	609	517
TOTAL* **	**33,226**	**36670**	**40277**	**42823**	**60246**	**65871**	**76,493**	**74,742**	**78,456**	**84,829**	**92145**

* Estimate

** Data prior to 1996 not available

*** Data excludes MOHP (1990-1995)

Attrition

General attrition: absolute numbers, rate and causes

Table 54. Total Attrition in Selected Ministries, 1990-2000

Ministry	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
MOEST	47	254	221	1,220	452	488	420	534	811	833	674
MOAI	48	75	159	311	181	248	152	266	467	542	695
MOHP	14	59	101	337	190	189	209	253	351	417	371
MPS	226	343	323	325	265	400	314	401	430	296	305
MOWD	12	26	51	123	54	119	63	78	292	59	61
Total	**347**	**757**	**855**	**2,316**	**1,142**	**1,444**	**1,158**	**1,532**	**2,351**	**2,147**	**2,006**
Total in Post*	**33,226**	**36670**	**40277**	**42823**	**60246**	**65871**	**76,493**	**74,742**	**78,456**	**84,829**	**92145**
Attrition Rate**	**1%**	**2.1%**	**2.1%**	**5.4%**	**1.9%**	**2.2%**	**1.5%**	**2%**	**3%**	**2.5%**	**2.1%**

* Total In- post and rates for 1990 to 1995 exclude data for MOHP, which was not available

** Rates exclude MOHP (1990-1995)

Table 54 shows that total attrition has increased almost six-fold, from 347 cases in 1990 to 2,006 cases in 2000. In 1993, a very high increase in attrition cases is recorded. This is largely due to the fact that in this year the Government of Malawi enforced the mandatory retirement age of 55 years. In fact, 1,500 cases of attrition (65%) in 1993 are due to retirement. If retirements were excluded, the total number of attrition cases in 1993 would

have been 816. In 1992 and 1994, 223 and 353 cases of retirement were reported respectively, suggesting that attrition levels in 1993 in normal circumstances (inclusive of retirement) should have averaged between 1,039 and 1,169. Thus, if it were not for the implementation of the retirement policy, the total number of attrition cases in 1993 would have been lower.

With the exception of the MoHP, a drop in the number of attrition cases is recorded in all Ministries in 1996. The decline was mainly due to decline in some attrition variables in the institutions. For example, the general attrition tables in the sectoral sections indicate decline in death in MoEST, MoAI and MoWD. Decline in retirement and dismissal is also recorded for MPS while redundancy is recorded for both MPS and MoWD. The decline in death in MOHP is offset with increases in resignation, dismissal and retirement.

The average attrition rate of the four organisations, except the MoHP, during the period 1990-1995 is 2.5% and during the period 1996- 2000 (including Health) is 2.2%. However, almost all Ministries exceed this average, with the exception of the MoEST (see Table 55).

With an average attrition rate of 15%, attrition in the MoWD is particularly high. This average was very high in three years. In 1993, the attrition rate was 29% due to a disproportionately high number of retirements. In 1995, the attrition rate was 16%, mainly due to a relatively high number of deaths and redundancies. In 1998, the attrition rate peaked significantly, reaching 47%. The main reason for this was the high number of redundancies due to the creation of regional Water Boards. This process of organisational restructuring also led to an increasing number of retirements, because in 1998 retirements reached almost the same levels as in 1993, although it remained far below the number of redundancies.

The average attrition rate in the MPS is 6.1%. However, this was high during various years. In 1991, the attrition rate was 6.9%, mainly due to retirements, deaths and a disproportionately high number of dismissals. In 1993, high numbers of deaths and retirements resulted in an attrition rate of 6.8%. The MPS is the only organisation where retirements did not exceed other causes of attrition in 1993. In 1995 and 1996, high death rates resulted in average attrition rates of 6.9% and 6.5% respectively. In 1997 and 1998, death and retirement where the main causes of higher than average attrition rates, reaching 6.5% and 7.8% respectively.

During 1990-2000, the average attrition rate in the MoAI is 4.8%. This is high in 1993 (4.9%), mainly because of a high number of retirements. From 1998, the attrition rate increases significantly annually. In 1998, the attrition rate is 6.4%, which is largely because of a very high number of deaths. In 1999, the attrition rate reaches 7.5%, due to a high number of retirements and deaths. Again, in 2000 the attrition rate increases, reaching 9.6%, with retirements and, to a lesser extent, deaths being the main causes.

The average attrition rate among qualified teachers and support staff in the MoEST is 1.6%. As with other Ministries, the attrition rate in 1993 exceeded this (4.3%) due to a high number of retirements. In 1997 and 1998, a high number of retirements and death results in an attrition rate of 1.9% and 2.2% respectively.

Table 55. Average Attrition Rate in the Malawi Public Service, 1990-2000

Sector	Average Attrition Rate[1]
MOWD	15%
MOAI	4.8%
MOHP	2.2% (1996-2000)
MPS	6.1%
MOEST*	1.6%
Total (excluding MOHP)	2.3%

* Qualified teachers and support staff only.

Table 56 summarises the causes of attrition in the various Ministries during 1990-2000 by rates calculated as a proportion of the number of people in post. It shows that death is the highest cause of attrition (2.6%), followed by retirements (1.7%). It further shows that mortality was highest in MoWD (5.9%) followed by MPS (2.8%) and MoAI (2.1%). Mortality in MoHP (1.3%) and MoEST (0.7) were lower. The table also shows that redundancy (0.9%), resignation (0.4%) and dismissal (0.3%) are small in comparison to deaths and retirements. As noted before, retirements peaked in 1993 when the Government implemented its retirement policy. This year accounts for over a quarter (26%) of all retirements during the period under review.

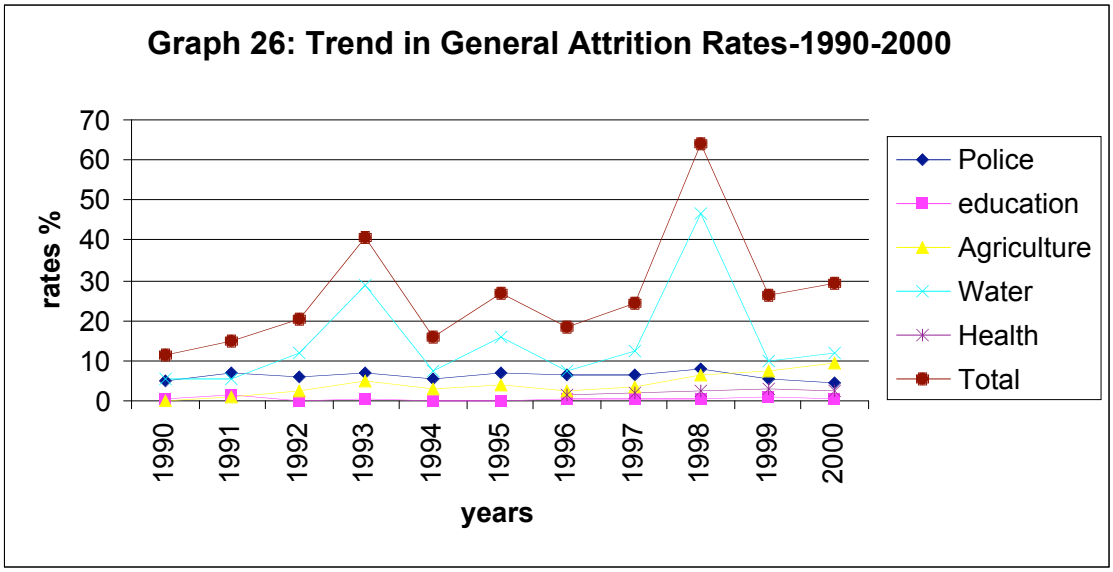
Table 56. Causes of Attrition in the Malawi Public Service, 1990-2000

	Death	*Average Rate%*	DISMISSAL	*Average Rate%*	Redundancy	*Average Rate%*	Resignation	*Average Rate%*	RETIREMENT	*Average Rate%*	Total
MOEST*	2,985	*0.7*	63	*0.02*	212	*0.05*	not available	*?*	2,691	*0.81*	5,951
MOAI	1,613	*2.1*	92	*0.2*	51	*0.05*	87	*0.1*	1,302	*1.6*	3,145
MOHP**	1,462	*1.3*	146	*0.2*	22	*0.02*	318	*0.4*	544	*0.3*	2,492
MPS	1,665	*2.8*	565	*1*	210	*0.4*	197	*0.3*	991	*1.7*	3,628
MOWD	380	*5.9*	15	*0.3*	275	*4*	35	*0.7*	233	*4*	938
Total	**8,105**	***2.6***	**881**	***0.3***	**770**	***0.9***	**634**	***0.4***	**5,761**	***1.7***	**16,151**

* Qualified teachers and support staff only

** Averages based on Data for 1996-2000 only

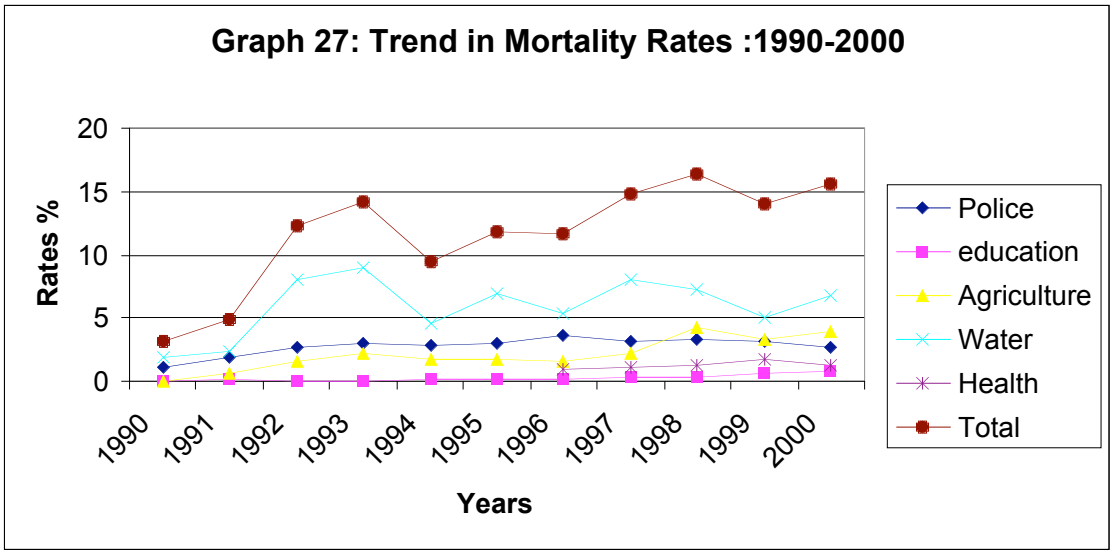
Graph 26 reflects the attrition trends in all five Ministries separately and collectively.



As graph 26 shows that the attrition rate in the Malawi Public service has increased over the 10- year period. It increased from an average of 11.5% for the 5 institutions in 1990 to 29.1% in 2000.Highest attrition rates were recorded for 1998(64.2%) mainly due to retirements and redundancies in the MoWD and in 1993 (40.9%) mainly due to mandatory retirements in all institutions. The trends for all institutions show a steady increase over the years, with MoWD showing highest attrition trends followed by MPS and MoAI.

Death –Related Attrition

Graph 27 shows the trend of mortality rates in the Malawi Public Service during the period under review.



Graph 27 shows an increasing trend in total mortality over the ten-year period under review. Total mortality rate increased from 3% in 1990 to 16% in 2000, an increase of more than 500%. In 1994 and 1996 a decrease in total mortality is recorded. However, as mentioned before, total attrition also decreased substantially in 1996. This suggests that some administrative reason may be the cause for the sudden decline in attrition in general and death-related attrition in particular. In 1999, a declining trend in mortality seems to set in. This could be due to incompleteness of the 2000 data.

Graph 27 also captures mortality trends in specific Ministries. All Ministries show a steady increase in mortality in the early 1990s, after which some varieties manifest themselves:

- The MoEST shows fairly stable levels between 1993 and 1996, after which the upward trend continues up to 2000.

- The MoAI shows a decreasing pattern between 1994 and 1996, followed by a sharp increase in 1997 and 1998 and a subsequent drop in 1999 after which mortality picks up again.

- The MoHP reveals a steady increase in mortality from 1996 until 1999, followed by a decline in 2000, which could be due to incompleteness of data for this year.

- The MPS shows a fairly consistent increasing trend until 1997, after which a declining trend seems to emerge, possibly due to the HIV/AIDS workplace programme in the MPS.

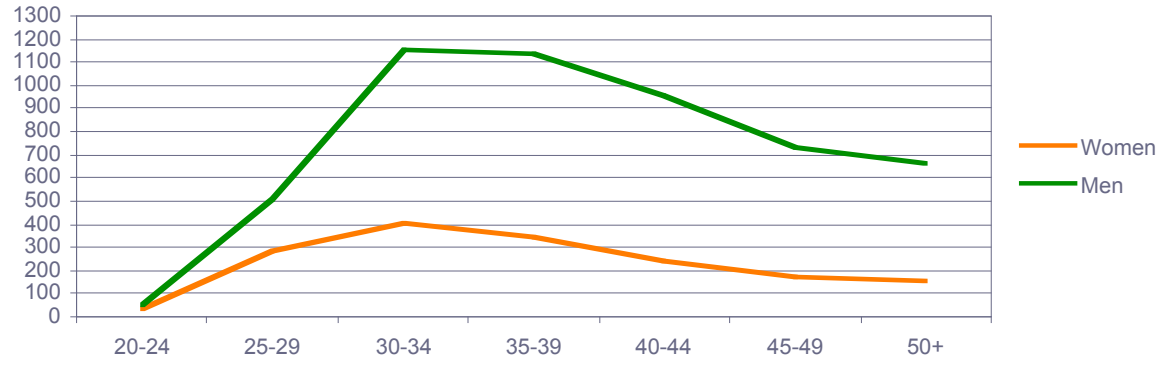
- The MoWD shows a sharp increase in mortality rates between 1991 and 1993 from 2.3% in 1991 to 8% in 1992 and 8.9% in 1993. Thereafter there is a sharp decline in 1994 after which the rates keep on fluctuating on an annual basis. It was difficult for the study to establish the cause of such an abnormal trend.

Mortality as a cause of attrition by sex and age group

Of the 16,708 records analysed during the course of this study, only 11,477 records indicated both the sex and age of the deceased. In other words, almost 30% of all staff records analysed lack this important information, highlighting weaknesses in record keeping in the Public Service.

A quarter (24%) of deaths where the sex of the deceased was known concerned women. The remaining 5,198 cases were men. Caution is needed when taking this gender breakdown at face value. In the absence of a gender- disaggregated data on total staff in post, an assessment of which sex is disproportionately affected by death cannot be made. Graph 28 depicts mortality trends by sex and age in the five organisations surveyed. As Graph 28 shows, deaths are disproportionately high among young adults of both sexes. Deaths among women rise significantly during the age group 20-34 years (with a particularly sharp increase from the 20-24 years age group to the 25-29 years age group), after which a decline sets in. Deaths among men rise even more sharply in the same age group, especially between age groups 25-29 and 30-34. Deaths remain high among men in their thirties. This is followed by a sharp decline until the age group of 44-49 years old. This age and gender profile corresponds with HIV/AIDS-related mortality trends.

Graph 28. Mortality Trends by Sex and Age in the Malawi Public Service, 1990-2000



Mortality as a cause of attrition by occupational category

Excess mortality, where mortality exceeds the Standardised Mortality Ratio (SMR) value of 100, is recorded for various occupational categories. The highest excess mortality is noted in the MoWD, where staff categories other than Professionals, Technical Officer and Technical Assistant show a SMR of 980. Table 57 shows the occupational categories for which excess mortality is reported. In comparison, the average SMR of secondary school teachers is 95 and for primary school teachers 61. This means it is only the MoEST which experienced below expected mortality during the period under review while the rest of the institutions experienced excess mortality.

Table 57. Excess Mortality by Occupational Category

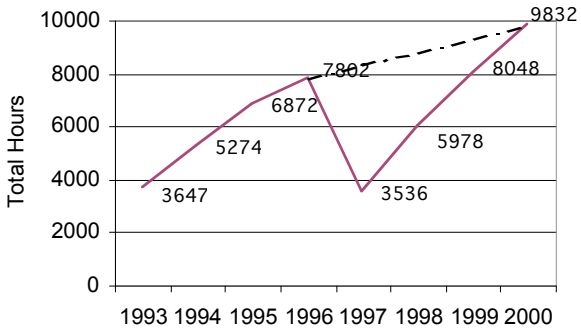
Occupational Category	Ministry	SMR
Other Staff	MOWD	980
Technical Officer	MOWD	552
DAHI Professional	MOAI	457
Clinical Officer	MOHP	393
Technical Assistant	MOWD	319
Professional	MOWD	288
Medical Assistant	MOHP	285
Research Scientist	MOAI	238
Inspector	MPS	235
Constable	MPS	219
Commissioner	MPS	200
Agriculture Officer	MOAI	202
Other MOAI Staff	MOAI	171
Technical Officer	MOAI	162
Technical Assistant	MOAI	149
Second Sergeant	MPS	127

Morbidity and Absenteeism

The lack of a system for recording absenteeism and its causes in most Ministries, except in some departments such as the Police Hospital in the MPS, made an assessment of morbidity trends difficult. The study found that the main reasons for absenteeism as noted in personnel files or as suggested by senior officers in the respective Ministries were, in order of frequency, as follows:

- Personal illness (sometimes qualified as long or short illness);
- Funeral attendance;
- Looking after sick people (a reason often given for women);
- Attending to personal matters;
- Lack of basic work materials, tools and services;
- Lack of transport money;
- Low staff morale.

Graph 29. Time Lost Due to Morbidity in MPS, 1993-2000



Only some departments like the Police Hospital in the MPS has a system for recording absenteeism. Based on data provided by the Police Hospital, time lost due to morbidity has been calculated. Graph 29 captures morbidity trends among staff in the Police Hospital. The sudden drop in 1997, with recorded absenteeism due to ill health dropping below 1993 levels, suggests changes in the information management system, rather than a real decline. The interrupted black line indicates the likely trend of absenteeism between 1997 and 2000.

In most Ministries, it was also noted that the existing sick leave policy is often not implemented for reasons varying from the erratic nature of absenteeism, with employees returning to work just before the policy could be applied, and humanitarian concerns, based on an understanding of the financial needs of sick employees. The sick leave policy in the Malawi Public Service has been adopted before the implications of HIV/AIDS on human resources became clear. It therefore does not take into account the frequency of illness associated with HIV/AIDS, nor the serious financial implications of regular periods of ill health on employees and on the organisation. In light of the epidemic, the sick leave policy will have to be reviewed.

The study also found that junior officers felt that the sick leave policy is not applied consistently to all employees. They argued that it is applied to junior officers, but that more leniency is exerted where senior officers are concerned. If this is true, it should certainly be an issue of concern to the relevant structures within the Malawi Public Service.

Vacancy and workload analysis

The study found a high number of vacancies in the Malawi Public Service. Furthermore, vacancy levels appear to have increased over the past five to ten years, with the exception of some occupational categories. The study revealed the following data for the Ministries surveyed:

- The vacancy rate in the MoEST is very high and stands at 58%. The vacancy rate among secondary school teachers is particularly disconcerting, reaching 77%.
- The vacancy rate in the MoWD has more than tripled from 1995 (18%) to 1999 (52%).
- Almost all occupational categories in the MoAI show an increase in vacancy rates between 1996 and 2000. The highest vacancy rate is recorded among DAHI Professionals, amounting to 67%.
- The MoHP also shows relatively high vacancy rates, but it is difficult to assess clear and uniform trends over time, as different occupational categories show mixed trends.
- In the MPS, large vacancies are reported amongst Recruits and at senior officer level.

With mortality being the single highest factor of attrition, accounting for 50% of total attrition in the Ministries surveyed, death clearly is a considerable factor in the vacancy situation of the Malawi Public Service.

High levels of vacancies, combined with a trend of increasing vacancies, raise various questions related to human resource planning and management systems. Specific issues that have emerged during the course of the study are:

- Slow intake and recruitment of new staff;
- The effectiveness of the promotion system to fill vacancies at senior levels;
- The quality of the incentive system to ensure the retention of staff;
- The discrepancy between the growth in authorised staff establishment over time, human resource planning and resources to fill new posts.

Whereas the Government of Malawi may have sound reasons to centralise decision-making regarding recruitment for specific posts in the Civil Service Commission, the result of this is a delay in the appointment of staff of between six to twelve months. During this period, the workload of other employees increases, leading to added stress and burnout, and the quality of work is likely to suffer. Staff morale will also be negatively affected. Alternatively, the work may not be done at all, resulting in a decrease in overall productivity and a decline in service provision. High vacancies at management levels will result in a collapse of the supervision system.

It will be important to fast- track the process of recruitment, especially given the fact that HIV/AIDS will exacerbate mortality trends in the Malawi Public Service. Furthermore, an assessment of which occupational categories are mostly affected by vacancies is needed to develop short-gap measures to overcome this problem.

Impacts on productivity and performance

In all Ministries it was noted that productivity and performance suffered from increased absenteeism, the high and growing levels of vacancies, and associated workload pressures. Due to a lack of records on absenteeism and morbidity, the extent to which productivity is undermined is difficult to quantify. Furthermore, absenteeism, attrition, vacancies and increased workload result in increased stress, frustration, burnout and low staff morale, which are not easily quantifiable. Yet, it is clear that these emotional impacts will also negatively affect the quality of work.

Financial implications

The study has highlighted that there are at least four types of financial implications that are associated with increased mortality in the Malawi Public Service. These include training and recruitment costs, funeral costs, death benefits, and the cost implications of absenteeism for funeral attendance. There are also cost implications associated with increased morbidity, namely medical and hospitalisation costs and the cost of absenteeism. These financial implications will be summarised here. These calculations are based on the estimation that on average 9.8% of all professional deaths are potentially HIV/AIDS-related, as calculated throughout this document.

Training and recruitment costs

To calculate the training and recruitment costs of mortality in general and HIV/AIDS-related mortality in particular in the Malawi Public Service, information on the occupational categories concerned, the qualifications of the deceased and years of service in relation to the outstanding number of years towards normal retirement is required. Because this information was not available for most cases, it is not possible to present a comprehensive picture of the total training and recruitment costs. However, selected data from the various Ministries indicates that training and recruitment costs are likely to be significant.

For example, to fill all vacancies in the teaching profession is estimated to cost MK 1.9 billion per annum, based on 17,300 recruits annually. According to Graph 7, between 1990 and 1999 1,739 deaths were recorded among primary school teachers and 158 among secondary school teachers. This translates into training costs of over MK 521 million for primary school teachers and almost MK 114 million for secondary school teachers.[14] Further calculations of likely HIV/AIDS-related deaths suggest that training costs for these replacements amount to about MK 51 million and MK 10.8 million for primary and secondary school teachers respectively. These calculations do not include recruitment costs, such as advertising, interviews, travel costs, etcetera.

Replacement costs of MoAI Professional Officers who have died between 1990-2000 is estimated at US$ 9 million, whereas replacement costs of 290 paramedical deaths is likely to cost the MOHP MK 13 million. Again, it is possible to calculate the cost of replacement in the case of HIV/AIDS-related deaths. With 28 possible HIV/AIDS-related deaths, replacement costs for these paramedical deaths amount to almost MK 1.3 million.

Funeral costs

A comparison between the institutions surveyed shows that certain variables influence funeral costs:

- The level of seniority of the deceased employee, which influences the cost of a coffin and the number of people attending the funeral;

[14] Training costs of primary school teachers are estimated at MK 150,000 per person per annum (2-year training programme) and of secondary school teachers at MK 180,000 per person per annum (4-year programme).

- The strategic role of the deceased employee in the organisation, which influences the number of people attending the funeral;
- The social position of the deceased employee, which influences the number of people attending the funeral;
- The distance to the region where the burial takes place.

On average, the estimated expenditure per funeral varies between MK 12,000 to MK 45,720. Based on current prices, the five Ministries surveyed are likely to have spent between MK 97,260,000 and MK 370,560,600 on 8,105 funerals over the past decade. If 799 deaths are likely to be HIV/AIDS-related, it means that HIV/AIDS-related mortality would have cost these Ministries between MK 9,588,000 and MK 36,530,280. As mortality in the Public Service increases over time, funeral costs also rise. In most Ministries, this expenditure is unaccounted for, as there is not budget item for funeral costs on Ministerial budgets. Instead, expenditure in other categories will be inflated to cover funeral expenditure. The MPS is the only organisation that has a system in place whereby employees contribute to a fund for funerals.

Death benefits

Death benefits also add a significant financial burden to cash-strapped institutions. Death benefits amount to three times the annual pay of the deceased and therefore depend on the position and salary of the deceased. Given the increasing trend in mortality in the Malawi Public Service, contributions towards death benefits will also have increased during the period under review.

The MoAI and the MoHP were able to provide data on death benefit payouts. Between 1997 and 2000, the MoAI paid MK 45,808,470 in death benefits for 999 deceased employees. This translates into an average of MK 45,854 per person. With 96 of these deaths likely to be HIV/AIDS-related, the epidemic would have cost the Ministry around MK 4.4 million in death benefits. During the same period, the MoHP paid MK 40.1 million in death benefits for 818 deceased employees, which is on average MK 49,000 per person. HIV/AIDS-related deaths are likely to have cost the Ministry on average MK 3.87 million in death benefits.

To calculate the total cost of death benefits paid by the institutions surveyed, this report estimates that death benefits amounted to MK 45,000 per person. This estimate is derived

from the average payouts by the MoAI and the MoHP and is slightly lower. Thus, for all 8,105 deaths between 1990-2000, death benefits have amounted to almost MK 365 million. Death benefits for HIV/AIDS-related deaths are therefore estimated at MK 36 million.

Cost of absenteeism for funeral attendance

This study has estimated that each funeral in the Malawi Public Service results in a two-day absenteeism of 20 employees. For the period under review, a total of 8,105 deaths in the five organisations translates into 324,200 days, or 14,736 months, or 1,228 years. Based on an average monthly salary of MK 3,000, total funeral attendance between 1990-2000 would have cost the five organisations MK 44,208,000, or just over MK 4 million per annum. Of this, HIV/AIDS-related deaths are likely to account for 31,960 days, or 1,453 months (121 years), which translates into an estimated financial loss of MK 4.4 million (MK 396,272 per annum). In reality, these figures are likely to be underestimations, as it does not include absenteeism for funerals of relatives or other members of the community. The loss of productive time and its financial implications associated with funeral attendance is clearly unsustainable.

Medical and hospitalisation costs

These costs could not be quantified due to a lack of records.

Cost of absenteeism due to increased morbidity

The study has calculated the cost of absenteeism for respective Ministries, based on the AIDSCAP calculation that HIV/AIDS-related death is likely to be preceded by a total of 65 days absenteeism, whereas people living with HIV/AIDS are likely to be absent for 15 days per annum. With an estimated 799 HIV/AIDS-related deaths in the five organisations surveyed, absenteeism between 1990-2000 is expected to amount to 51,935 days, or 2,361 months (197 years). The financial implications depend on the salary scale of the deceased. However, assuming that the average salary is MK 3,000, the financial implications of HIV/AIDS-related morbidity amount to about MK 7.1 million. In reality, this figure is likely to be exceeded, because the calculation does not include employees currently living with HIV/AIDS who may be sick for extensive periods of time, nor time lost due to HIV/AIDS-related illness in the family or community.

In conclusion, the financial implications of HIV/AIDS on the Malawi Public Service are significant. As Box 4 shows, the cost implications associated with HIV/AIDS-related morbidity and mortality in the five Ministries surveyed vary between MK 57.4-84 million. However, this excludes training and replacement costs and medical and hospitalisation costs.

Box 4. Estimated Costs of HIV/AIDS on the Malawi Public Service[a]

Cost item[b]	**Amount (MK million)**
Funeral costs	9.6-36.5
Death benefits	36
Funeral attendance	4.4
Cost of absenteeism due to morbidity (preceding death)	7.1
Total	**57.4-84**

[a] Includes the five Ministries surveyed, i.e. 79% of total Public Service
[b] Excludes training and recruitment costs and medical costs

The organisations surveyed comprise 79% of the Malawi Public Service. An attempt to extrapolate the anticipated costs of HIV/AIDS-related mortality and morbidity for the whole Public Service shows that it is likely to amount to roughly MK 73-106 million for the period under review. This translates into an annual expenditure of about MK 6.6-9.6 million for the whole Public Service. Most of these costs remain hidden, because current budgets do not include a line item for these expenses.

As mentioned before, the total costs are likely to exceed these estimates, because these only include the cost of HIV/AIDS-related mortality and morbidity of government employees. As such, the estimates exclude calculations of the loss of time due to ill health and funeral attendance of relatives and members of the community.

Impact on service provision

The loss of experienced staff impacts negatively both on the coverage of service provision, through a reduction in the total number of staff, and on the quality of services, caused by the loss of skills and experience. Whereas the first (shortfall in the number of people) may be relatively easy to deal with, the second (loss of experience) amounts to a substantial organisational loss. Depending on which staff categories are most affected, certain organisational functions and capacities will be eroded, which will inevitably impact negatively on the core business of the organisation.

Furthermore, the external environment is also increasingly more complex, with the 'client base' also affected by the HIV/AIDS epidemic. As a result, demands for government support and services are increasing, whilst the capacity to respond to these demands is being eroded.

This combination results in a situation of "double jeopardy" (UNGASS, 2001, p. 3), where there will be less resources and capacity to meet increased demands.

Conclusion

Through increased morbidity and mortality, HIV/AIDS is eroding the human resource capacity of the Malawi Public Service. This results in a significant decline in productivity and a loss of critical financial resources in a context already characterised by financial scarcity. The overall impact is a lack of capacity to fulfil core functions and facilitate the social and economic development of Malawi. The next section will include recommendations that can help to reduce the institutional vulnerability of the Malawi Public Sector in general and specific organisations in particular.

F. Conclusions and Recommendations

The study found a great level of homogeneity in the five public sector organisations assessed. Therefore, the conclusions and recommendations in this section are considered relevant for all sectors and can be applied to all government institutions. It is believed that this study lays the foundation for more in-depth sector specific studies, which could result in sector specific recommendations.

Conclusions

Four main conclusions can be drawn from the findings presented in this report. These are as follows:

1. The findings of the study provide adequate evidence of a high magnitude of human resource capacity erosion in the public service between 1990 and 2000, mainly due to deaths, retirement and resignations, especially among professional and technical cadres. HIV/AIDS has contributed significantly to the capacity erosion, which results in low productivity.

2. The study has further revealed that female employees in the civil service die at an earlier age than male counterparts. This corresponds with the gender and age profile of HIV/AIDS in the general population. Amongst other things, this situation undermines the goal of gender equality, particularly because many women die before they reach decision-making positions.

3. There is ample evidence of institutional vulnerability to HIV/AIDS of all organisations surveyed. This vulnerability can largely be attributed to the fact that they operate: a) in a policy environment that is not yet sensitive to HIV/AIDS; b) with very high vacancy rates; c) with inadequate financial and material resources, and, d) substantial information gaps due to lack of comprehensive information management systems.

4. The study results show that the public service is utilising huge amounts of scarce resources on ever-increasing sick officers and funerals, both of which are to a significant extent the consequence of HIV/AIDS. As a result, the opportunity cost is very high since

the resources have to be diverted from productive purposes to care and support for the HIV/AIDS infected and affected public servants. This impairs the delivery of quality public services.

These general conclusions form the basis for the recommendations contained in this report. The overall aim of the study was assess impact of HIV/AIDS on human resources in the public service so that Government can develop appropriate human resource policies, plans and strategies to strengthen the capacity of the public service.

Recommendations

Information Management Systems

1. Government should put in place comprehensive information management systems to ensure the recording and monitoring of morbidity, mortality and absenteeism. This will enable public sector organisations to monitor the loss of productivity and the financial implications of these variables.

2. Computerised information management systems should be introduced throughout the public service. This would facilitate the dissemination of information between departments, which is particularly useful where it concerns operations that are intersectoral and interdependent.

3. Information systems in each government institution should be disaggregated by gender, age and occupation to provide better data for monitoring and human resource planning. This data needs to be up-dated on a regular basis.

4. National AIDS Commission (NAC) should conduct regular HIV/AIDS surveillances in the public service to come up with more realistic projections on HIV prevalence.

5. Ministries/departments should collect and disseminate information on HIV/AIDS.

Policy Recommendations

6. More resources for capacity building should be targeted to sectors where mortality is disproportionately high.

7. In view of the high expenditure on funerals there is need for:
    a) Each government institution to budget for and record funeral costs;
    b) DHRMD, in close collaboration with Ministry of Finance and Economic Planning, should facilitate the establishment of Welfare Funds in all government institutions and promote employee contributions towards funeral costs as is the case in the Police Service to ensure cost sharing;
    c) A mechanism of cost sharing funeral expenses should de developed.

8. Government should identify services that could be automated to avoid disruption in service delivery due to high attrition rates.

9. DHRMD should put in place a mechanism that facilitates the fast tracking of the recruitment system to ensure continuity of government operations.

Capacity Building

10 Comprehensive incentives package should be developed to cater for the skills that are difficult to replace.

11 Government should explore possibilities of using UNVs, as a short - term measure to replace critical capacities.

12 Government should institute performance management or results oriented appraisal system.

13 Government should consider increasing the Malawi Government Scholarship Fund to cater for the development of critical skills. Donors can also assist by supporting the training of critical skills in particular sectors, which are highly affected by HIV/AIDS.

Mainstreaming HIV/AIDS in the Workplace

14. Each sector should develop an HIV/AIDS Workplace policy, which is specific to its work environment and operations.

15. All members of staff in every ministry/department should be sensitised on HIV/AIDS, and should be fully involved in HIV/AIDS prevention and mitigation activities.

16. Government should consider explore the possibility of providing Anti-Retroviral drugs (ARVs) to its employees. Further research is required on the cost implications of providing such treatment in comparison with current expenditure on HIV/AIDS-related morbidity and mortality in Public Service organisations.

APPENDICES

Appendix 1. Death Rates in the MOEST

Primary School Teachers

	Establishment	No in post	Total attrition	No of deaths	Adjusted No in post *1	Death rate/1000	Expected deaths *2	SMR (%) *3
1990	20,336	20,580	31	10	20,611	0.5	230	4.3
1991	20,336	17,942	167	62	18,109	3.4	203	30.5
1992	20,336	23,294	189	138	23,483	5.9	263	52.5
1993	36,610	26,333	1124	191	27,457	7.0	308	62
1994	48,864	27,948	381	179	28,329	6.3	317	56.5
1995	48,864	45,775	410	202	46,185	4.4	517	39
1996	48,864	49,138	327	167	49,465	3.4	554	30.1
1997	48,864	47,370	396	188	47,766	3.9	535	35.1
1998	48,864	41,634	595	290	42,229	6.9	473	61.3
1999	48,830	45,812	581	312	46,393	6.7	520	60
					Average	***4.83***		***43.1***

**1 Number in post + attrition or Number that exited that year.*

**2 Calculated as follows:* $\frac{\text{No in post}}{1000} \times \text{Average National death rate}$

**3 Calculated as follows:* $\frac{\text{Number of deaths}}{\textbf{No of expected deaths}} \times 100$

Expected deaths have been calculated based on the following national death rates:
1990 – 1994: 6.4 (DHS 2000, average of M+F adult mortality rate)
1995 – 1997: 8.8 (derived as a mean of the above and below mortality rates)
1998 – 1999: 11.2 (as in first explanation)

Secondary School Teachers

	Establishment	No in post	Total attrition	No of deaths	Adjusted No in post	Death rate/1000	Expected deaths	SMR
1990	1,074	1,096	1	1	1,097	0.9	12.3	8.1
1991	1,074	1,095	5	5	1,100	4.5	12.3	40.7
1992	1,074	1,141	12	9	1,153	7.8	13	69.2
1993	1,412	1,212	45	23	1,257	18.3	14	125.7
1994	1,412	2,672	37	29	2,709	10.7	30.3	95.7
1995	1,396	2,713	33	21	2,746	7.6	30.8	68.2
1996	1,396	2,948	25	19	2,973	6.4	33.3	57
1997	1,396	2,925	31	16	2,956	5.4	33.1	48.3
1998	1,396	4,604	35	14	4,639	3.0	52	27
1999	6,178	3,985	43	21	4,028	5.2	45	46.7
					Average	***6.99***		***58.7***

Appendix 2. Teacher : Pupil Ratios

Primary School Teachers						
	No teachers	**% Change**	**Enrolment**	**% Change**	**Teacher : Pupil ratio**	**Recommended ratio**
1990	20,580		1,325,453		1 : 64	1 : 60
1991	17,942	-12.8	1,400,682	5.7	1 : 78	1 : 60
1992	23,294	29.8	1,662,583	18.7	1 : 71	1 : 60
1993	26,333	13	1,795,451	8	1 : 68	1 : 60
1994	27,948	6.1	1,895,423	5.6	1 : 68	1 : 60
1995	45,775	67.7	2,860,819	50.9	1 : 62	1 : 60
1996	49,138	7.3	2,887,107	0.9	1 : 59	1 : 60
1997	47,370	-3.6	2,905,950	0.7	1 : 61	1 : 60
1998	41,634	-12.8	2,805,785	-3.4	1 : 67	1 : 60
1999	45,812	10	2,896,280	3.2	1 : 63	1 : 60
					Average: 1 : 66	
Secondary School Teachers						
1990	1,096		48,922		1 : 45	1 : 40
1991	1,095	-0.1	59,715	22.1	1 : 55	1 : 40
1992	1,141	4.2	68,956	15.5	1 : 60	1 : 40
1993	1,212	6.2	72,329	4.9	1 : 60	1 : 40
1994	2,672	120.5	88,752	22.7	1 : 33	1 : 40
1995	2,713	1.5	105,841	19.3	1 : 39	1 : 40
1996	2,948	8.7	139,386	31.7	1 : 47	1 : 40
1997	2,925	-0.8	179,605	28.9	1 : 61	1 : 40
1998	4,604	57.4	192,091	7	1 : 42	1 : 40
1999	3,985	-13.4	242,740	26.4	1 : 61	1 : 40
					Average: 1 : 50	

Appendix 3. General Attrition as a Ratio of Staff in Post in the MOAI

General Attrition as a Ratio of Staff in Post by Cause and Year for MOAI

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Staff in post	6,136	6,163	6,247	6,399	6,269	6,336	6,240	7,372	7,272	7,214	7,275
Death	20	39	95	141	114	107	98	165	304	236	294
Rate	*0.3%*	*0.6%*	*1.5%*	*2.2%*	*1.8%*	*1.7%*	*1.6%*	*2.2%*	*4.2%*	*3.3%*	*4%*
Dismissal	1	2	6	1	8	5	8	16	10	15	20
Rate	*0.01%*	*0.03%*	*0.09%*	*0.01%*	*1.13%*	*0.08%*	*0.13%*	*0.22%*	*0.14%*	*0.2%*	*0.3%*
Redundancy	1	1	1	8	9	18	2	1	8	2	0
Rate	*0.01%*	*0.01%*	*0.01%*	*0.13%*	*0.14%*	*0.28%*	*0.03%*	*0.01%*	*0.1%*	*0.03%*	*0%*
Resignation	2	9	9	6	1	9	8	10	13	12	8
Rate	*0.03%*	*0.15%*	*0.14%*	*0.1%*	*0.01%*	*0.14%*	*0.13%*	*0.14%*	*0.2%*	*0.02%*	*0.12%*
Retirement	24	25	48	155	49	109	36	74	132	277	373
Rate	*0.04%*	*0.04%*	*0.8%*	*2.4%*	*0.8%*	*1.7%*	*0.6%*	*1%*	*1.8%*	*3.8%*	*5.1%*
Total attrition	**48**	**75**	**159**	**311**	**181**	**248**	**144**	**244**	**466**	**539**	**694**
Attrition rate	***0.8%***	***1.2%***	***2.5%***	***4.9%***	***2.9%***	***3.9%***	***2.3%***	***3.3%***	***6.4%***	***7.5%***	***9.5%***

Appendix 4. Attrition by Occupational Category in MOAI (a)

General Attrition by Occupational Category in MOAI, 1990-2000*

Occupational Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Agricultural Officer**	3	3	12	12	5	7	14	11	19	13	10	**109**
Research Scientist	0	0	1	3	5	2	7	7	6	5	10	**46**
DAHI Professional	0	1	1	7	4	3	2	2	4	5	7	**36**
Technical Officer	5	7	8	22	12	16	13	14	16	39	22	**174**
Technical Assistant	22	35	105	179	91	145	89	153	217	335	259	**1,630**
Other	18	29	32	88	64	75	27	79	98	145	93	**748**
Unknown	-	-	-	-	-	-	-	-	107	-	294	**401**
Total	**48**	**75**	**159**	**311**	**181**	**248**	**152**	**266**	**467**	**542**	**293**	**3,145**

* Excludes 401 officers who exited between 1998 and 2000, whose occupational category was not known.
** Officers include professional officers in the departments of Agricultural Extension and Technical Services, Land Resource Management and Irrigation.

Death-Related Attrition by Occupational Category in MOAI, 1990-2000

Occupational Category	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Agricultural Officer*	0	0	3	7	2	0	9	6	6	3	3	**39**
Research Scientist	0	2	1	1	3	1	3	4	2	4	0	**21**
DAHI Professional	0	1	1	5	3	3	2	1	1	1	3	**21**
Technical Officer	4	3	4	9	7	4	7	9	5	9	7	**68**
Technical Assistant	5	18	59	73	56	56	54	88	112	125	61	**707**
Other	11	15	27	46	44	43	23	57	64	77	36	**443**
Unknown	-	-	-	-	-	-	-	-	114	17	183	**314**
Total	**20**	**39**	**95**	**141**	**115**	**107**	**98**	**165**	**304**	**236**	**293**	**1,613**

Appendix 5. Attrition by Occupational Category in the MOAI (b)

Attrition Rates by Occupational Category in MOAI

	1990			1992			1994			1996			1998			2000		
Occupational Category	**In-Post**	**No. Exited**	**Rate**	**In-Post**	**No. Exited**	**Rate**	**In-Post**	**No. Exited**	**Rate**	**In-post**	**No. Exited**	**Rate**	**In-Post**	**No. Exited**	**Rate**	**In-post**	**No. Exited**	**Rate**
Agriculture Officers	155	3	2%	155	12	8%	155	2	1%	155	14	9%	169	19	**11%**	148	10	7%
Research Scientists	75	0	0%	75	1	1%	75	3	4%	75	7	9%	71	6	8%	60	10	17%
Animal Health & Industry	46	0	0%	46	1	2%	46	3	7%	46	2	4%	21	4	19%	20	7	**35%**
Technical Officers	331	5	2%	331	4	1%	331	7	2%	331	13	4%	326	16	5%	385	22	6%
Technical Assistants	4,059	22	0.5%	4,059	59	1%	4,059	56	1%	4,059	89	2%	3,674	217	6%	3,200	259	8%
Average	**4,666**	**30**	**0.6%**	**4,666**	**77**	**2%**	**4,666**	**71**	**2%**	**4,666**	**125**	**3%**	**4,261**	**262**	**6%**	**3,813**	**308**	**8%**

Death-Related Attrition by Occupational Category in MOAI

	1990			1992			1994			1996			1998			2000		
Occupational Category	**Filled**	**Died**	**Rate**	**Filled**	**Died**	**Rate**	**Filled**	**Died**	**Rate**	**Filled**	**Died**	**Rate**	**Filled**	**Died**	**Rate**	**Filled**	**Died**	**Rate**
Agriculture Officers	155	0	0%	155	3	2%	155	2	1%	155	9	6%	169	6	4%	148	3	2%
Research Scientists	75	0	0%	75	2	3%%	75	3	4%	75	3	4%	71	2	3%	60	0	0%
DAHI Professionals	47	0	0%	47	1	2%	47	2	4%	47	2	4%	21	1	5%	20	3	15%
Technical Officers	331	4	1%	331	4	1%	331	7	2%	331	7	2%	326	5	2%	385	7	2%
Technical Assistants	4,089	5	0.1%	4,089	59	1%	4,089	56	1%	4,089	54	1%	3,674	112	3%	3,200	61	2%
Others	2,093	11	0.5%	2,093	27	1%	2,093	44	2%	2,093	23	1%	2,084	64	3%	2,131	36	2%

Appendix 6. Vacancy Analysis in the MOHP

MOHP Vacancy Analysis, 1992

Staff Category	Established Posts	Filled Posts	Vacancy	Vacancy Rate
Clinical				
Clinical Officer	232	143	89	38%
Doctor	133	68	65	49%
Physiotherapist	21	11	0	48%
Medical Assistant	567	407	160	28%
Dental Assistant	18	12	6	33%
Nursing				
Registered Nurse	736	499	237	32%
Public Health Nurse	35	20	15	43%
Enrolled Nurse / Midwife	1,308	1,017	291	22%
Preventive				
Environmental Health Officer	27	23	4	15%
Health Assistant	261	238	23	9%
Health Surveillance Assistant	0	496	-496	
Technical Support				
Laboratory Technician	31	18	13	42%
Laboratory Assistant	18	12	6	33%
Pharmacy Technician	24	9	15	63%
Pharmacy Assistant	33	25	8	24%
Radiography Assistant	9	8	1	11%

MOHP Vacancy Analysis, 1996

Staff Category	Established Posts	Filled Posts	Vacancy	Vacancy Rate
Clinical				
Clinical Officer	236	227	9	4%
Doctor	77	81	-4	-5%
Medical Specialist	47	20	27	58%
Medical Assistant	502	208	294	59%
Dentist	7	2	5	71%
Nursing				
Registered Nurse	662	422	240	36%
Enrolled Nurse / Midwife	1,343	962	381	28%
Preventive				
Environmental Health Officer	99	69	30	30%
Health Assistant	215	101	114	53%
Health Surveillance Assistant	3,000	3,531	-531	-18%
Technical Support				
Laboratory Technician	22	22	0	0%
Laboratory Assistant	81	73	8	10%
Pharmacy Technician	8	8	0	0%
Pharmacy Assistant	23	52	-29	-126%
Radiographer	14	7	7	50%
Radiography Technician	0	6	-6	
Radiography Assistant	8	19	-11	-138%

Appendix 6 (continued)

MOHP Vacancy Analysis, 1998

Staff Category	Established Posts	Filled Posts	Vacancy	Vacancy Rate
Clinical				
Clinical Officer	279	205	74	27%
Clinical Surgeon	8	4	4	50%
Medical Officer	113	72	41	36%
Medical Assistant	647	410	237	37%
Physician	2	0	2	100%
Obs / Gynaecologist	8	2	6	75%
Ophtomologist	6	0	6	100%
Paediatrician	4	2	2	50%
Pathologist	5	0	5	100%
Physiotherapist	3	2	1	33%
Dermatologist	1	0	1	100%
Dental Surgeon	6	1	5	83%
Dental Therapist	41	38	3	7%
Nursing				
Registered Nurse	717	379	338	47%
Enrolled Nurse / Midwife	1,549	1,264	285	18%
Public Health Nurse	17	10	7	41%
Preventive				
Environmental Health Officer	129	94	35	27%
Health Education Officer	48	12	36	75%
Health Assistant	304	287	17	6%
Health Surveillance Assistant	6,000	3,347	2,653	44%
Technical Support				
Laboratory Technician	33	22	11	33%
Laboratory Assistant	109	79	30	28%
Pharmacy Technician	16	13	3	19%
Pharmacy Assistant	83	85	-2	-2%
Radiographer	48	26	22	46%
Radiography Technician	68	15	53	78%
Pharmacist	9	5	4	44%

Appendix 7. Components of the Police Reform Programme

i) *Strategic Development*: The MPS seeks to create an effective, efficient and accountable organization through an integrated planning process. This process is meant to facilitate strategic and tactical decision-making right from the station level, where frontline policing takes place, to all levels of the MPS. The aim is to ensure that there is a rational deployment of the limited resources available in the Police Service and that the Service is always deriving the maximum impact from these resources.

ii) *Community Policing*: Through Community Policing the MPS aims at building a credible and working relationship with the community through the creation of formidable partnerships with other government agencies, private and commercial organizations and the community at large to tackle crime and other issues affecting the quality of life within the communities. Initiatives to accomplish this aim include:
- Community mobilization through the establishment of community policing forums, crime prevention panels, crime prevention committees and neighbourhood watch schemes;
- Community empowerment through civic education of communities to take an active role in crime prevention and human rights education for the community to demand their rights each time they are in contact with the police;
- Victim empowerment through the provision of victim-friendly services for all victims of crime with particular sensitivity towards vulnerable groups, such as women;
- Care and treatment of offenders through the proper handling of suspects within the provisions of Malawi's Constitution.

iii) *Human Resource Development*: The aim in this area is to develop a conducive environment where all staff has the opportunity to achieve their highest potential. The main focus is on the implementation of the Human Resource Management Strategy, which provides for the effective recruitment, selection, development, training and welfare of staff. Within the Human Resource Strategy there is also an intention to formulate a Management Development Strategy that takes into account the special requirements of police managers at various levels in undertaking their roles in an overcharging global environment.

iv) Information Technology Strengthening: This component is aimed at improving the decision-making process within the MPS through the provision of accurate and timely management information reflecting policing priorities and the performance of the Service. This seeks to redress current problems with management information, which is either unavailable, not always on time or in an unusable format.

v) *Fleet Management*: This component seeks to ensure a more effective management of the organisation's fleet of vehicles with particular emphasis on using the vehicles in a manner that reflects the operational demands of the MPS.

vi) *Financial Management*: This component seeks to improve financial management within the MPS through effective control of the limited finances by ensuring that the most critical positions in the finance department are staffed by competent officers.

Appendix 8. Structure and Operations of the MOWD

The Ministry achieves its strategic objectives through two technical programmes: the Water Resources Management Programme and Water Supply and Sanitation Programme. A Management and Support Services Programme is also there to provide policy direction and management services to the two technical departments for effective achievement of the strategic objectives.

The Water Resources Management Programme is responsible for monitoring, assessing, planning, developing, conserving and protecting water resources to ensure sustainable use by all sectors that need water for the production of their goods and the provision of their services. This programme is ranked as high priority in the Ministry. It has the following sub-programmes: Hydrological Services, Hydro-Geological Services, Water Resources Administration, Water Resources Development, Water Quality Services, Hand Pump Research, and Development and Nature.

The Water Supply and Sanitation Programme aims at providing potable water to rural communities, increasing their access to piped water and supervising the delivery of water supply and sanitation services by the Water Boards and other institutions. Sub-programmes include: Rural Piped Water Schemes, Community Based Management (CBM) and National Borehole Maintenance (NBM). The CBM aims at empowering the communities to operate, maintain and manage their own water systems, which include rural community boreholes, shallow wells, dams and piped gravity water supply schemes.

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