



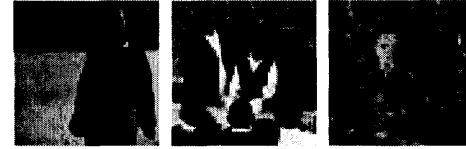
Disease, HIV/AIDS and Capacity Implications: a case of the Public Education Sector in Zambia



research paper 2
February 2003



**Regional Project on
HIV and Development**



Disease, HIV/AIDS and Capacity Implications: a case of the Public Education Sector in Zambia

Jolly Kamwanga¹
Phillimon Ndubani¹
Roland Msiska²

1. Institute of Economic and Social Research (INESOR), University of Zambia (UNZA).

2. United Nations Development Programme (UNDP), Pretoria, South Africa.

Acknowledgements

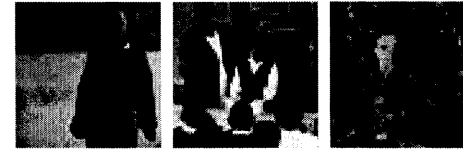
The report was prepared by J. Kamwanga, P. Ndubani (Institute of Economic and Social Research), and R. Msiska (United Nations Development Programme, Pretoria, South Africa). The authors wish to thank D.K. Chiwele, for reviewing the report and A. Lubundi, P. Mashinkila, and M.Msoni, who not only participated in data collection, but also helped with data compilation and analysis. The efforts of Ms G. Chikopa in typing interview scripts are appreciated.

The authors also wish to thank all Ministry of Education officials, from headquarters, provinces, districts, to the schools, who facilitated interviews and access to information for the study.

The authors hope this report will contribute to the stock of information on the challenges of reforming the public education sector in an environment of constrained economic opportunities and increasing disease burden.

List of Acronyms

STD:	Sexually Transmitted Disease
MoE:	Ministry of Education
GNP:	Gross National Product
HIV:	Human Immuno-Deficiency Virus
AIDS:	Acquired Immune Deficiency Syndrome
NASTLP:	National AIDS/STDs/TB/Leprosy Programme
FPP:	Focal Point Person
UNDP:	United Nations Development Programme
INESOR:	Institute of Economic and Social Research
ANC:	Antenatal Clinic
UNAIDS:	United Nations Agency for AIDS
UNICEF:	United Nations Children's Fund
HoD:	Head of Department
MOFED:	Ministry of Finance and Economic Development
MoOH:	Ministry of Health
PhD:	Doctor of Philosophy
TB:	Tuberculosis
UNZA:	University of Zambia
SAP:	Structural Adjustment Programme
BA:	Bachelor of Arts
ZBEC:	Zambia Basic Education Certificate
PTC:	Primary Teachers Certificate
PTA:	Parent Teachers' Association
GPF:	General Purposes Funds
MPU:	Micro Projects Unit
ZPC:	Zambia Primary Certificate
L2:	Lower Secondary
U2:	Upper Secondary
HE:	Health Economics
UT:	Untrained Teacher
APC:	Advanced Primary Certificate
Dfid:	Department for International Development
Jica:	Japanese International Co-operation Association
CIDA:	Canadian International Development Association
CCF:	Christian Children's Funds
DEO:	District Education Officer
PEO:	Provincial Education Officer



HRD:	Human Resources Development
CDC:	Curriculum Development Centre
ZLS:	Zambia Library Service
UNESCO:	United Nations Education, Scientific and Cultural Organisation
ECZ:	Examinations Council of Zambia
NGO:	Non-Governmental Organisation

List of Tables

Table 2.1	Districts and Basic Schools included in the study
Table 7.1	Combination of Classes, by Schools and Districts
Table 4.1	Actual Spending on Education, Health, Defence and Debt-Servicing, 1991-1996
Table 5.1	HIV/AIDS Profile for Zambia, 1994-2000
Table 5.2	HIV Prevalence: comparing surveillance data among antenatal clinic attendants (ANC) and population-based data (1995-1996), Lusaka urban and Kapiri Mposhi rural
Table 5.3	Reported Number of Teachers' deaths, by Sex and Age, 1990-1999
Table 6.1	Teachers' Professional Qualifications by District
Table 6.5	Number of Person Days lost due to Illnesses by Schools and District
Table 6.4	Establishment and Actual Staffing Levels, by School
Table 6.6	Teacher-Pupil Ratios by school
Table 6.7	Sources of Staff Movements out of School by District

List of Figures

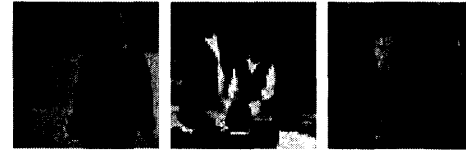
Figure 3.1	Conceptual Framework relating Disease, HIV/AIDS to Capacity of the Education Sector
Figure 5.1	Reported Trend in Teachers' Mortality, by Sex
Figure 6.2	Contribution of death to Staff Deficiency, Chongwe District
Figure 6.3	Contribution of death to Staff Deficiency, Lusaka Urban District
Figure 6.1	Contribution of death to Staff Deficiency, Mumbwa District
Figure 6.6	Sources of Staff Attrition, Chongwe District
Figure 6.4	Sources of Staff Attrition, Lusaka Urban District
Figure 6.7	Sources of Staff Attrition, Mumbwa District
Figure 6.5	Sources of Staff Attrition, Chibombo District
Figure 6.4	Teacher Pupil Ratios with and without Death, Mumbwa
Figure 6.5	Teacher Pupil Ratios with and without Death, Lusaka Urban District
Figure 6.6	Teacher Pupil Ratios with and without Death, Chongwe
Figure 6.7	Teacher Pupil Ratios with and without Death, Chibombo

List of Appendices

Table A01	Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Chongwe District
Table A02	Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Mumbwa District
Table A03	Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Chibombo District
Table A04	Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Lusaka Urban
Table A06	Reasons for Movements out of Schools, Chongwe and Mumbwa districts
Table A07	Reasons for Movements out of Schools, Chibombo
Table A08	Reasons for Movements out of Schools, Lusaka Urban
Table A09	Spending per Primary Student (by Province) and per University student 1994-97
Table A10	Contribution of Death to Staffing Deficiencies by District and Schools
Table A11	Number of Person Days lost due to Illnesses by District and Schools

Contents

Acknowledgements	i
List of Acronyms	i
List of Tables	ii
List of Figures	ii
List of Appendices	ii
Executive Summary	3
1. Background Information	6
2. Methodology	7
2.1 Study Population	7
2.2 Data Collection and Analysis	7
2.3 Study Limitations	8
3. Conceptual Framework	8
3.1 Background Factors	8
3.2 Disease and HIV/AIDS	8
3.3 Outcomes	9
4. Broad Setting, Disease and Capacity Implications at the Systems Level	11
4.1 Introduction	11
4.2 The Institutional and Policy Framework	11
4.3 Regulation on Illness, Bereavement and Human Resources Development	12
4.4 Financing of the Education Sector	13
4.5 Conclusion	14
5. An overview of Morbidity and Mortality	16
5.1 Introduction	16
5.2 A National Overview of the HIV/AIDS Situation	16
5.3 Impressions on HIV/AIDS Situation in the Education Sector	17
5.4 Reported Trends in Mortality among Teachers	18
5.5 Ministry Activities on HIV/AIDS	19
5.6 Conclusion	19
6. Disease and Capacity Implications at the Basic School Level	20
6.1 Introduction	20
6.2 Staffing levels and Qualifications	20
6.3 Revenue Generation and Expenditure Patterns	21
6.4 Prevalence of illness and Death	22
6.41 Staffing Deficiencies	22
6.42 Increasing Absenteeism	25
6.43 Person days lost to Illness	25



6.44 Increasing Teacher Pupil Ratios	26
6.5 Conclusions	29
7. Responses to the threat of Illness	30
7.1 Introduction	30
7.2 Suspension of Selected Subjects	30
7.3 Combination of Classes	31
7.4 Engagement of Part-time Teachers	31
7.5 Requesting Pupils to Transfer	32
7.6 Overstaffing	32
7.7 Conclusion	32
8. Recommendations	33
9. Reference	35
10. Appendices	36

Executive Summary

Financing of the Education Sector

Economic effects arising from slowing economic performance have resulted in, among other outcomes, drastically reduced expenditure on education, which has dropped in real terms since the structural adjustment programme started in 1982/83. By the nineties, about 10% of the total education budget was devoted to education and training compared with 14.5% in the early 1980s.

The largest proportion of expenditure on education goes to salaries and contractual benefits. In 1980-84, primary education accounted for 39% of education expenditures and in 1990-94 for 33%. During the same period, university education accounted for 16% of education expenditure and in 1990-94 for 19%.

The difficulties besetting the education sector have resulted in various constraints, which include: inadequate equipment, teaching materials and maintenance; overcrowding; dilapidated educational infrastructure; unattractive conditions of service; and an exodus of teachers.

In 1993, in response to these difficulties, government began a process of consultation with a broad spectrum of stakeholders to devise new policy directions. The current policy, "Educating Our Future", is the third major educational policy, having been preceded by the "Educational Reforms" of 1977, and later "Focus on Learning".

Educating Our Future addresses the entire field of formal institutional education, paying attention to democratisation, decentralisation and productivity, on the one hand, and curriculum relevance and diversification, efficient and cost-effective management, capacity building, cost sharing, and revitalised partnerships, on the other. The national education policy is premised on the democratic principles of efficiency, equity, accountability and cost effectiveness. To this end, the public education system has been liberalised and decentralised in accordance with democratic principles of good governance.

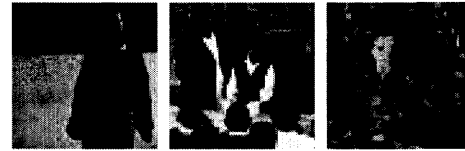
Embedded within the broader policy of liberalisation is decentralisation, which involves the devolution of power from the central to district and local schools. It promotes broad-based participation in the management of education with a greater emphasis on the creativity, innovation and imagination of local-level education managers.

Government general orders provide guidelines on illnesses and bereavements in the public sector. There are clear instructions on the length of time somebody can be ill and continue drawing a salary and when the half-salary condition is applied. While these clauses are clearly spelt out, very little is done to enforce them.

Impressions on Disease and HIV/AIDS Situation in the Sector

While attention has always been directed towards economic effects on the educational sector, emerging health-related influences are assuming importance. HIV/AIDS has serious consequences for the sector. Teachers constitute a high-risk group, with 42 % of an urban sample of teachers having been found to be HIV-positive.

Details on the extent of morbidity among teachers are not available, but anecdotal and qualitative reports point to an increasingly grave situation. Data show there has been an increase in the mortality of teachers over the years.



Conceptual Framework

A conceptual framework was developed to guide the study. The framework traces the relationship of broad background variables to identified capacity dimensions, which in turn lead to aggregate outcomes in the sector. Disease is introduced in the framework both as an independent variable affecting capacity on its own and also as an intervening variable, indirectly affecting capacity through its effect on the other broad socio-economic factors.

The background factors are grouped into economic, socio-political and technological categories. Each category of variables can affect capacity separately or through a synergistic combination among the categories.

Disease in general and HIV/AIDS in particular can affect capacity variables either directly or indirectly by acting through the other background variables outlined above. For instance, mortality arising from HIV/AIDS will compel the sector to replace workers through training. Disease can also affect capacity dimensions directly through illnesses, death and attendant funeral and burial activities. Some of the outcomes include increasing teacher-pupil ratios and deteriorating education standards.

Capacity and Disease Manifestation at the basic school level

The study revealed that almost all the schools visited had lost teachers who had died mainly from long-term illnesses. There was a near-uniform pattern of schools losing teachers to death, or through transfer on medical grounds. From the interviews conducted it was evident that most of the recorded mortality cases had been due to HIV/AIDS-related conditions.

Because of movements towards schools in better-serviced areas, the prevalence of illness and death clustered in some schools. Schools in areas with good health facilities recorded more cases of mortality and long-term illnesses than others.

Interviews and record reviews showed there was a marked increase in absenteeism in almost every school visited. Among the principal factors explaining this were the increased poverty levels in the country, which force people into moonlighting.

Rising morbidity and mortality also explain part of the increase in absenteeism. The incidence of disease contributes to absenteeism from two angles. Firstly, illness of teachers can directly lead to absenteeism. Secondly, provision of care for sick relatives can also result in teachers being absent from work.

Interviews with headmasters revealed there had been an increase in the incidence of illnesses among the teachers. These illnesses were a combination of both short- and long-term conditions, with the latter having shown prominence in recent years. The incidence of tuberculosis and, by extension, HIV/AIDS, is assuming major prominence in the education sector.

Although government is the primary financier of public schools, recurrent needs are solely met with internally generated funds. These funds are derived from parent-teacher associations (PTA) and general purpose funds (GPF). At the times of the study, almost all the schools covered had difficulties in collecting funds from pupils. A lack of ways and means to enforce payments has further compromised the ability of schools to collect adequate revenue.

Due to the limited revenues generated from fees, some schools were trying other means of income generation. Donors and non-governmental organisations (NGOs) are an important source of school funds.

Examination of expenditure patterns shows common features among the schools. Construction expenses consumed the largest proportion of revenues. This reflects a maintenance backlog that has resulted from a long period of neglect.

Other major components of expenditure among the schools included transport and stationery expenses. Although not featuring prominently among the expenditure items, funerals and medical costs are an increasing component of expenditure. Without reliable government funding, medical and funeral expenses are met from internally generated resources.

Recommendations

As the ministry tries to resolve functional constraints, it is necessary that similar programmes aimed at forestalling the effect of increasing morbidity are implemented. Policy makers need to have information on the situation of illnesses and mortality for them to appreciate threats to the education system.

Although there are anti HIV/AIDS programmes in schools, these are restricted to pupils. Anti-AIDS could be extended to teachers either by reorientating these programmes to include teachers, or designing parallel programmes specifically targeting them.

While regulations are very clear on procedures to be taken when a member of staff has been ill for a long period, these rules are hardly ever enforced. Enforcing government orders on long-term illnesses would benefit the sector and also serve the affected teachers' interests.



Ailing teachers have opted to move to urban areas, which have better health facilities. Ensuring that government general orders on illness are adhered to would help resolve this problem of increasing staff inequities.

There should be improvements not only in the compilation of data at schools, but also in ensuring standard data collecting formats. Efforts should not be entirely focused on inventing new mechanisms for data collection and compilation, but also on improving current arrangements.



1. Background Information

After independence Zambia set about addressing inequities of access through infrastructure developments that resulted in an impressive expansion of education opportunities. Access to education in both rural and urban areas improved within a short space of time. Achievements in the education sector were closely tied to overall national economic performance. Hence, as the economy took a downturn, the education sector too was affected.

Since the economic decline set in and the subsequent introduction of economic reforms, the sector has persistently borne the brunt of chronic under-funding. The amount spent on education has fallen substantially in real terms following the introduction of the structural adjustment programme. The proportion of the total budget devoted to the sector has declined over the years from 14.5% in the early 1980s to a mere 10% in the 1990s. In recent years, education has accounted for about 2.5% of GDP, compared with 5-6% in the mid-1980s.

The net result of these economically induced problems include: reduced government funding, especially for capital projects; inadequate equipment, teaching materials and maintenance; overcrowded classrooms, especially in urban primary schools; dilapidated educational infrastructure; unattractive conditions of service for teachers; exodus of teachers from the public sector; and lack of effective management.

In response to the difficulties experienced, government has tried to invigorate the sector through various policy initiatives. In 1977, government published the Educational Reform, which emphasised education as an instrument for personal and national development. This was followed by Focus on Learning, whose emphasis was mobilisation of resources for the development of school education. The current policy document, Educating our Future, addresses the entire field of formal institutional education, paying attention to democratisation, decentralisation and productivity on the one hand, and curriculum relevance and diversification, efficient and cost-effective management, capacity building, cost sharing and revitalised partnerships, on the other.

The results of these policy initiatives have been mixed. Deterioration of standards in the education sector has continued. Part of the reason lies in the sector's vulnerability to developments in other sectors, especially the economy.

In addition to the dampening effect of the economic slump, the increasing incidence of illness and death is exerting an additional burden on the sector. The effect of HIV/AIDS is particularly serious.



This report presents findings of a study carried out to assess capacity issues in the context of the increasing incidence of disease in general and HIV/AIDS in particular on the public education sector. The first part of the report presents findings from the systems level. Here, economic conditions, the policy and institutional framework and human resource development as they relate to sector capacity are discussed. Thereafter, a sector review on the morbidity and mortality situation is outlined. The latter part of the report presents information on disease and capacity at the operational basic school level.

2. Methodology

2.1 Study population

The study targeted the Ministry of Education (MoE) at three levels; headquarters, districts and basic schools. The study population consisted of officials from ministry headquarters, district level and headmasters of basic schools in four districts of Chongwe, Mumbwa, Chibombo and Lusaka. At headquarters, the national HIV/AIDS co-ordinator was involved in the review of records. In basic schools, headmasters were interviewed and where a headmaster was out of station, the deputy headmaster or senior teacher was interviewed. The schools were selected in consultation with the district education officers (DEOs). Table 2.1 shows the schools selected for each of the districts. The study covered 11 each from Chongwe and Lusaka Urban, seven from Mumbwa and five schools from Chibombo.

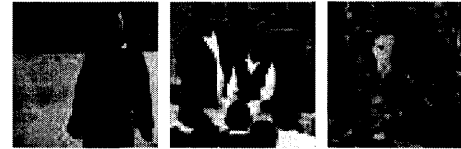
Table 2.1
Districts and Basic Schools included in the study

Chongwe	Mumbwa	Chibombo	Lusaka Urban
Chongwe	Kalilwe	Chibombo	Kaunda Square
Nangwenya	Kapyanga	Mulungushi AGRO	Woodlands 'B'
Silverest	Chibuluma	Chisamba	Lotus
Chainda	Shibuyunji	Moomba	Regiment
Kasisi	Shimbizhi	Keembe	Chawama
Chalimbana	Mwembezhi		Chelston
Chinyunyu	Kasalu		St Monicas
Chitemalesa			Olympia
Evergreen			Lusaka Girls
Kapete			Mahatma Ghandi
Bimbe			Chibelo

2.2 Data collection and Analysis

Data were collected using an interview schedule and review of records. Three interview schedules were developed, each targeting ministry officials and/or records at headquarter, district and basic school levels. The interview schedule for the sector level analysis (ministry officials) consisted of five sections: sector policy and programmes; administrative structure and competencies; financial resources; human resources development; infrastructure and information resources; and HIV/AIDS sector activities. The interview schedule for the district and school level interviews consisted of seven sections: administrative structure and competencies; financial resources; sector linkages and co-ordination; information resources; infrastructure and other capital assets; HIV/AIDS and other health specific issues; and education outputs.

Records reviewed at the school level included; staff attendance registers (where available), pupil and staff monthly returns, log books and school annual returns. When a specific case of illness or death was mentioned, the following information was obtained: age, sex, marital status (including health status of the spouse), number of children (including the health status of under-five children), date of joining school, length of current illness or length of illness before death, grade taught by the ill or dead person and the observed effects of the illness or death on the school.



All the interviews were conducted on the school premises. The research team consisted of two researchers and two research assistants, all from INESOR. Permission to visit schools was sought from the DEOs and letters of introduction given to the research team. Data collection was conducted from July through to September 2000.

Both quantitative and qualitative data analysis techniques were used. Quantitative analysis consisted of the use of a spreadsheet and SPSS. This was mainly for data from record reviews. Qualitative analysis consisted of text and thematic analysis in line with the interview schedule. For the quantitative analysis, the primary unit of analysis was the teacher, for which individual specific data was collected from all the schools.

2.3 Study Limitations

The data for this report were derived from statistics collected at headquarters, districts and basic schools. All the data were collected through review of records and discussions with officials. More information could have been collected but insufficient documentation, especially of illness episodes, made the exercise difficult. At the district level, poor and erratic inflow of information from schools rendered collection of up-to-date data difficult. At the school level, the study was not able to obtain precise and quantifiable data on levels of absenteeism. Thus, it was difficult to categorise absenteeism by cause. There was no documentation on specific causes of illness and/ or death for teachers that had died. Data collected were based on verbal accounts from the headmasters.

3. Conceptual Framework

A conceptual framework was developed to guide the study in assessing the effect of disease on the capacity of the education sector. The framework traces the relationship of broad background variables to identified capacity dimensions, which in turn lead to specified outcomes in the sector. HIV/AIDS is introduced in the framework both as an independent variable affecting capacity on its own and also as an intervening variable indirectly affecting capacity through its effect on the other broad socio-economic factors. (Figure 3.1)

3.1 Background Factors

The background factors are grouped into economic, socio-political and technological factors. Each category of variables can affect capacity separately or through a synergistic combination among the categories. The level of economic performance has a direct bearing on capacity through its effect on the amount of resources accruing to the sector. Weak economic performance results in reduced government revenues and consequently limited sector budgets, which in turn limits sector capacity. As a result of fiscal constraints, inputs into the education sector will decline, leading to poor-quality education, among other outcomes.

Socio-political processes also affect capacity through a direct effect on the culture, structure and competencies of the sector. The underlying political ideology determines the education financing policy. The state of the art (technology) has a direct bearing on capacity as it determines the state of infrastructure and information systems. An efficiently managed information system will lead to a faster flow of information among constituents and therefore improved co-ordination of sector activities and better scope for delivering on sector mandates.

3.2 Disease and HIV/AIDS

Disease in general and HIV/AIDS in particular can affect capacity variables either directly or indirect by acting through the other background variables outlined above. For instance, mortality arising from HIV/AIDS will compel the sector

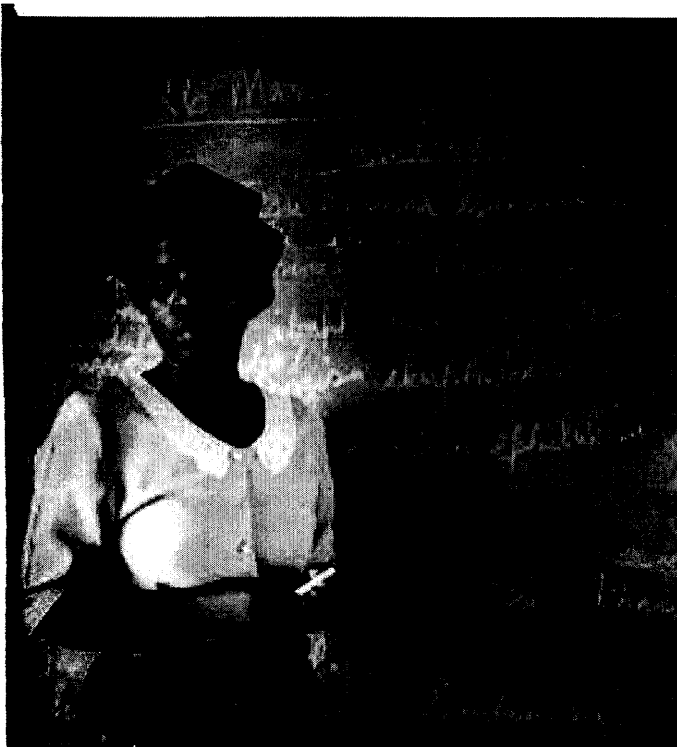
to replace teachers through training. To the extent that those who die are experienced and in their prime, this represents a major loss of human capital, which limits opportunities for good quality education. The additional training costs also divert resources to immediate consumption requirements, thus thwarting prospects of economic growth.

As the sector loses labour resources through increased mortality, the need for additional training and /or other delivery modes is only possible if policy makers and managers in the sector know about the problem, and are prepared to act. A high attrition rate among policy makers may lead to reliance on less able personnel who may not have the requisite skills and experience to address the issues as those that have died.

The above account traces the indirect effect of HIV/AIDS through various background variables. The disease can, however, affect capacity dimensions directly through illnesses, death and attendant funeral and burial activities. Because of the chronicity of the condition, HIV-infected persons remain incapacitated for a long time, keeping them away from their teaching responsibilities and other domestic economic activities (especially in the later stages of the disease), while still being paid. In the interim, relief staff may have to be engaged at additional cost to the employer. Employers also face funeral-related costs. These cumulative costs will result in a reduction of resources for financing productive activities and hence reduce the capacity of the sector.

3.3 Outcomes

Among the likely outcomes of this interplay of factors is rising illness-related expenses, which will reduce the capacity of the sector. To the extent that the loss of teachers alters the teacher-pupil ratio, the quality of education will be compromised, marked by among other outcomes a decline in progression rates and low-quality graduates.



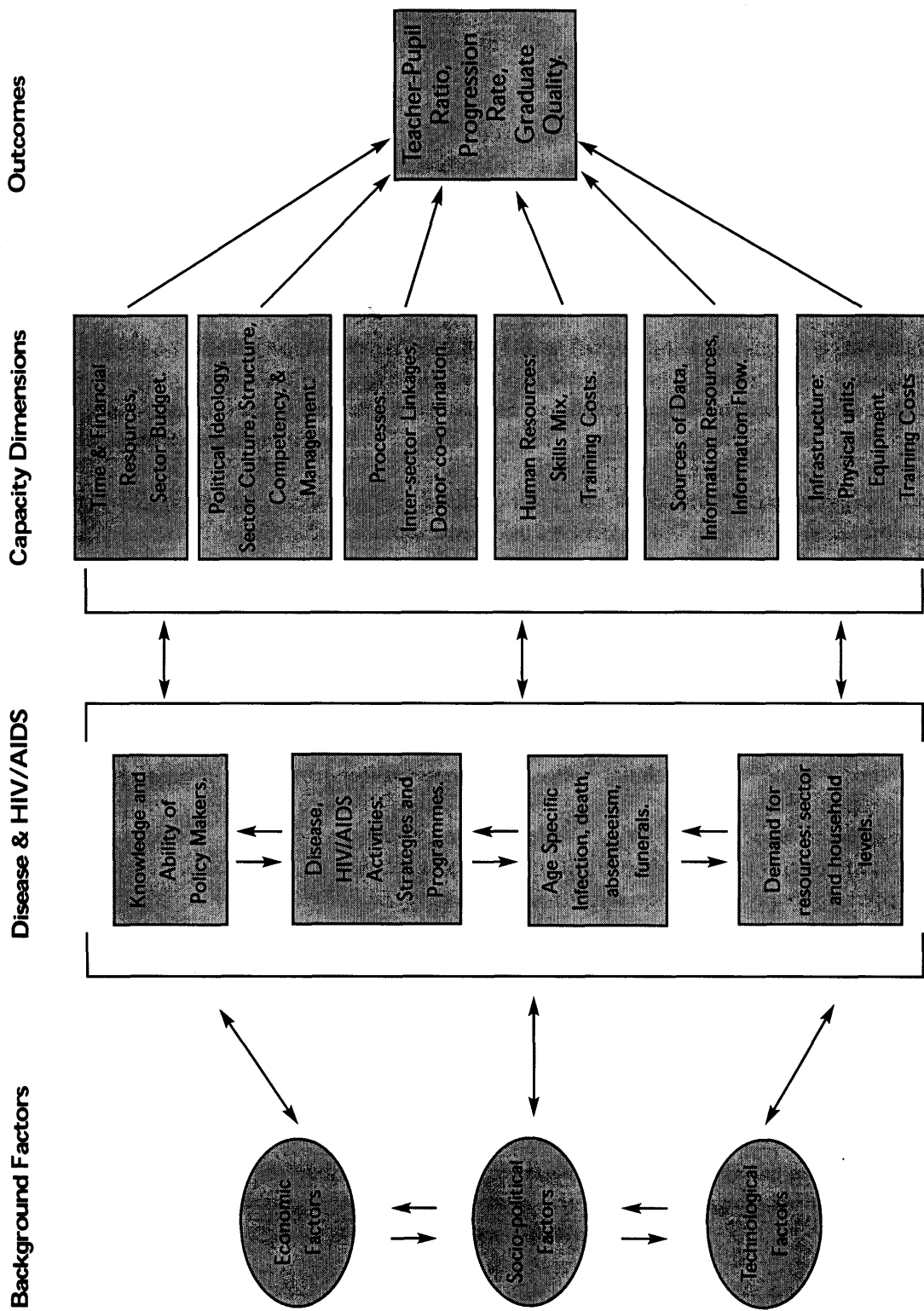


Figure 3.1: Conceptual Framework relating Disease, HIV/AIDS to Capacity of the Education Sector

4. Disease and Capacity Implications at the systems level

4.1 Introduction

This section discusses disease and capacity implications at the systems level. The section provides an overview of the sector institutional and policy framework and a synopsis of education financing. Regulations relating to illnesses, bereavements and human resources development as these relate to functional capacity of the sector are also outlined.

4.2 The Institutional and Policy framework

At the helm of the sector is a minister who is the political head. The permanent secretary is in charge of administration and is assisted by three deputies in charge of administration, technical and personnel units. At the provincial, district and school levels the permanent secretary is represented by the provincial and district education officers (PEOs and DEOs) and headmasters, respectively.

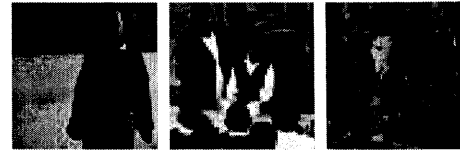
At headquarters, the ministry is divided into functional units: the inspectorate; planning; registry; accounts; human resources development (HRD); buildings; procurement; and administration. There are other departments affiliated to the ministry and these include: The Curriculum Development Centre (CDC); Educating Broadcasting Services (EBS); Bursaries Committee; School Guidance Services; Continuing Education; Zambia Library Service (ZLS); Zambia National Commission of the United Nations Education, Scientific and Cultural Organisation (UNESCO); Teacher Education; and the Examinations Council of Zambia (ECZ).

A number of policies have shaped activities in the educational sector. Education Reforms of 1977 emphasised education as an instrument for personal and national development. This was followed by Focus on Learning, which stressed mobilisation of resources for the development of school education. (MOE, 1996)

These policy initiatives were followed by the current policy, Educating Our Future, which addresses the entire field of formal institutional education, paying attention to democratisation, decentralisation and productivity on the one hand, and curriculum relevance and diversification, efficient and cost-effective management, capacity building, cost sharing, and revitalised partnerships, on the other. The national education policy is premised on the democratic principles of efficiency, equity, accountability and cost effectiveness. To this end, the public education system has been liberalised and decentralised in accordance with democratic principles of good governance. A guiding principle behind the reform process is that provision of education at all levels can best be effected through strong partnerships between the MoE, other government ministries, NGOs and communities. (MOE, 1996)

Liberalisation of the education sector entails fundamental changes in the power relations within the sector. Under a liberalised education system, the right of private organisations, individuals, religious bodies and local communities to establish and control their own schools and other educational institutions is recognised and welcomed. Liberalisation of the education system allows for those with resources to establish such institutions and to run them in accordance with their own principles, subject to stipulated rules and regulations.

The policy strongly advocates decentralisation, which involves the devolution of power to districts and local schools. It promotes broad-based participation in the management of education, with a greater emphasis on the creativity, innovation and imagination of the local-level education managers.



Measures to promote equity include allocating resources to those in greatest need, providing appropriate support systems and changing the tangible and intangible qualities of the system to cater for the diverse educational needs and interests of the population. Where access, participation and achievement in education are impeded by gender, physical, mental, economic or social factors, government seeks to eliminate sources of educational disadvantage to enhance equity.

The policy further recognises that all pupils should have access to teaching of excellent quality to enable them to attain the highest standards of learning. In its broadest sense, quality can be measured by internal and external criteria. The internal criteria encompass both the inputs and outputs of the educational system. Inputs as indicators of quality include size of classes, quality of buildings, teacher-pupil ratios, quantity of resources, quality of instructional materials, contents of education, length of contact hours, morale and professional calibre of teachers. The external criteria for assessing the outcome of education can be measured through the abilities of people who have gone through the school system being able to be socially and economically productive.

The Zambian education policy framework articulates the vision and ideals characteristic of any developing country, taking into account adverse economic conditions. Therefore, it should be borne in mind that the policy is being conceived, formulated and forged amid such economic hardships. The attainment of the ideals and the vision reflected in the policy may be impeded by these limitations.

4.3 Regulations on Illness, Bereavements and Human Resources Development

Illness and Bereavements

Matters pertaining to illness and bereavements are guided by government general orders, which stipulate that when staff members are absent from duty because of ill health or injury for more than two days, they must submit to their head of department or responsible officer a certificate by a registered doctor or dentist stating that they are unfit to carry out duties. If they cannot immediately obtain a certificate because the practitioner is away, they must inform the responsible officer or head of department accordingly. (GRZ, 1990)

If it can be proved that officers are unable to carry out their duties due to ill health or injury, the head of department or responsible officer may authorise absence from duty for up to 14 days without a medical certificate.

Officers other than those employed on a temporary or part-time basis, may be absent from duty due to ill health or injury for a period of not more than 90 days on full pay in any period of two years ending on the 90th day of such sickness, provided the absence is covered by a medical certificate from a recognised practitioner. The period may be extended to a maximum of 180 days on full pay with an additional period of up to 180 days on half-pay on the recommendation of a medical board appointed by the permanent secretary, MoH. This extended period can only be authorised if the medical board advises that it is probable that the officer will be able to return to duty at the end of the period.

In case of bereavement, the MoE, like other government units, provides for funeral costs. The costs are associated with both direct funeral and related costs. The costs include purchase of coffin; funeral grant; transport costs; subsistence allowance and other miscellaneous costs. The ministry is required to buy a coffin whose value is commensurate with a deceased's rank. The average amount is K300 000. The amount paid out is left to the discretion of supervising officers.

The ministry pays a fixed funeral grant for death of a staff member and that of his or her nuclear family. Death of a serving staff member entitles the family to a funeral grant of K250 000. A funeral grant of K200 000 is paid for the death of a member of the nuclear family. The ministry is also required to pay K200 000 in the event of death of a staff member of another government ministry or department whose spouse works for the MoE.

Vehicle are provided and fuel costs covered for the duration of the funeral. The number of vehicles allowed depends on the rank of the deceased person. A subsistence allowance, at the rate of K80 000 for junior members of staff and K90 000 for senior officers (grade 2 and above), is provided for officers who spend nights away from the station while accompanying the body of deceased staff member. This happens in cases of staff members whose "home" is away from the duty station. Various miscellaneous funeral processions expenses are covered. These could include purchase of food. The extent of miscellaneous expenditure is left to the discretion of heads of departments.

Human Resources Development

The ministry has policy guidelines which govern its human resources development and management functions. Paid study leave is granted to employees who are nominated by the ministry. The ministry also grants unpaid leave to employees who wish to pursue studies not considered urgent. On return they are bonded for two years.

For courses lasting one academic year or more, candidates selected for training should be those with at least 24 working months before compulsory retirement. Courses of shorter duration are open to everybody other than people due to retire. Candidates for long-term training are required to undergo appropriate medical examinations. However, HIV/AIDS tests are not included.

Candidates who meet the minimum entry qualifications prescribed by respective training institutions and programmes are eligible for training. Working experience and performance are considered when selecting and sponsoring employees for further training. Only those confirmed in their positions are considered.

4.4 Financing of the Education Sector

Financing problems in the sector have negatively affected functional capacity. Records have revealed that education remains under-funded in Zambia and the distribution of educational spending is also problematic. (Booth et al. 1996) Selected salient features about the financing of the educational sector help to put this into perspective:

- Public expenditure on education rose until 1982, after which it started to decline, as it did in the other social sectors. The most severely affected areas were those relating directly to community services (housing, water and sanitation, community development and youth) where spending in the period 1989-92 was only one-fifth of what it had been at the beginning of the structural adjustment period.
- The actual amount spent on education has fallen substantially in real terms since structural adjustment started in 1982/83, with spending in 1993 being only 47% of what it had been 10 years earlier;
- In the 1990s, only about 10% of the total budget was devoted to education and training compared with 14.5% in the early 1980s (and 15-22% in neighbouring countries);
- In recent years, education has accounted for about 2.5% of GDP, compared with 5-6% in the mid-1980s, 6-9% in neighbouring countries, and 3-9% in sub-Saharan Africa as a whole;

The period since 1993 has seen an overall increase of 19% in social sector spending but none of the sectors has returned to anything like its position before structural adjustment started. Spending on education in 1995 was about two thirds of what it had been in 1983, whereas spending on health had risen to 85% of its 1983 level. Over a 20-year period, total spending on health averaged about 60% of the spending on education, but in the subsequent years, the difference in expenditure between the two sectors has narrowed.

While expenditure in the social sector has declined, spending on debt servicing regularly exceeds spending on education, health and all other social services combined. In 1994, more than four times as much was spent on debt servicing as was spent on education, and in 1995 and 1996 more than three-and-a half times as much. (Table 4.1)

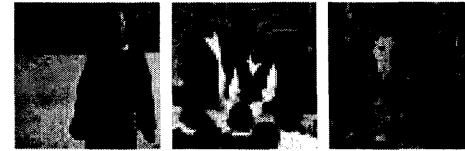


Table 4.1:
Actual Spending on Education, Health, Defense/Defence and Debt -Servicing, 1991-1996

Year	Education	Health All Social	Sectors	Defense/Defence	Debt-Servicing
1991	107.8	73.6	192.5	-	565
1992	78.6	46.8	137.1	-	326
1993	72.0	44.7	145.3	49.5	337
1994	76.0	74.1	176.7	59.7	340
1995	91.6	72.4	191.8	66.0	344
1996	88.4	67.7	176.1	35.0	318
Avg. 1993-96	82.0	64.7	172.5	52.5	335
%age of GDP* 1993-1996	2.5	2.0	5.3	1.6	10.3

Source: Kelly, M.J., 1998, *Primary Education in a Heavily Indebted Poor Country, The Case of Zambia in the 1990s*

Public Spending per Student

Government funds devoted to education in 1996 amounted to \$88.4 million for 1 750 000 students in educational institutions of all types. (Table 4.01) Thus, the average spending per student was \$50. In 1983 the figure was \$118 per student. The 1996 spending per student was the equivalent of 16% of per capita GDP, compared with 27% in 1983. As a rule of thumb, a country's expenditure on education is on the right lines if the global unit cost per student is in the neighborhood of 30% of per capita GDP. Zambia was spending more or less the right amount on education in 1983. In 1996 its spending was only about half of what it should have been in relation to national production and population. (Kelly, 1998)

The lion's share of expenditure on education goes to salaries and contractual benefits. At the primary school level, salaries for teachers account for 90-95% of the expenditure. This means almost no public funds are spent directly by the primary schools themselves or by the local education offices on teaching materials and school resources. It can also mean that education offices may face difficulties in paying school overheads, particularly electricity and water bills, where there is need for these. This results in urban schools frequently being without these services. (Kelly, 1998)

In 1980-84, primary education accounted for 39% of education expenditures and in 1990-94 for 33%. During the same period, university education accounted for 16% of education expenditures and in 1990-94 for 19%. In response to stirrings in the academic community since the mid-1990s, its own perceptions of the message of the 1990 world conference on Education For All, and pressure from the donor community, the education ministry has increased the percentage allocation to primary education. This stood at 43% of actual expenditure in 1996. (Kelly, 1998)

By the same token, the percentage allocations for primary and university should be seen in the context of the number of students provided for. With approximately 5 000 students, the universities received 17% of the funds available in 1996, whereas with 1.5 million pupils, primary schools received 43%. This imbalance led to unit costs at university level being well over 100 times greater than those in primary schools.

4.5 Conclusion

Economic Factors

The effect of economic decline on the education sector is widely acknowledged. Not only have absolute funding levels to the sector declined, there has been a corresponding decline in the proportion of GDP accruing to the sector. The economic slump has had deleterious effects on the sector. Both internal (educational inputs) and external (products of the educational system) quality aspects have been negatively affected.

Policy and Institutional framework

The sector has undergone policy changes in line with the changing socio-economic and political conditions. Starting in the 1970s, when initial policy initiatives centered on using the education system as a tool for national development, subsequent policies emphasised resource mobilisation and latterly the importance of devolution of powers to local communities.

The extent to which these policies were implemented and bore fruit varied and had been determined, among others, by exogenous factors. Thus, when the economy was relatively stronger, the sector's implementation capacity was better. Over time, capacity has waned due to the weakened economy. So, although there have been pronouncements of decentralisation, the structures established at lower levels of the education system lack a commensurate economic base to be effective.

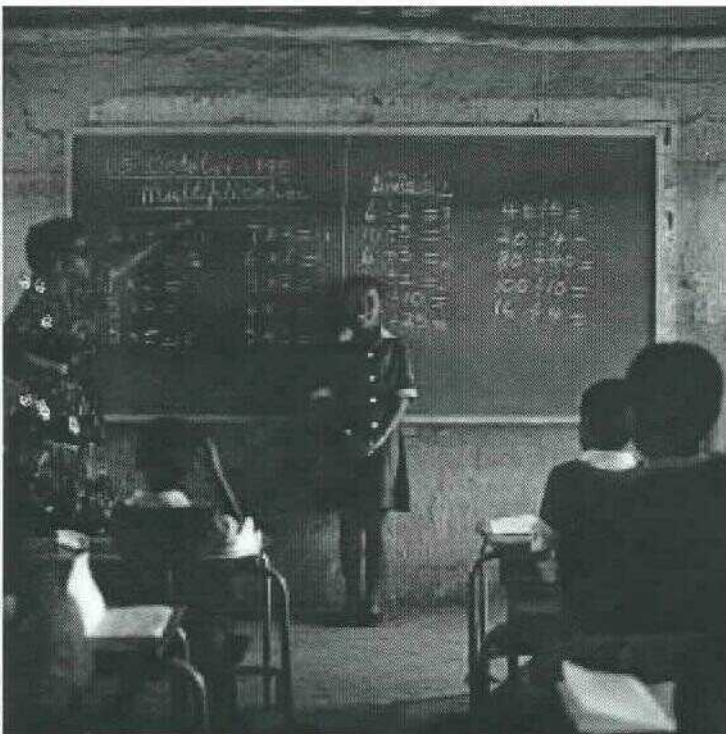
Influence of disease

Although government general orders are very clear about what should be done in case of long-term illnesses, there are enforcement problems. There are hardly any cases of terminally ill individuals being laid off on account of poor health. The ministry thus has many teachers on the pay-roll who have been ill for long periods.

While economic influences on the sector are widely acknowledged, there is no evidence of similar acknowledgement of the equally serious consequences of the increasing influence of illness and death, especially HIV/AIDS. The disease affects quality of education through effects on both inputs and outputs of the sector. The weak economic base and increasing disease burden could have an effect on the ability of the ministry to deliver. Directly arising from long-term illnesses would be an accompanying increase in funeral-related costs, which would further tilt the education expenditure in favor of personnel-related costs.

Much as workers are entitled to security of employment, these rights ought to be weighed against the costs to the sector, as well as the right of the employees themselves to get their terminal benefits when they are healthy enough to prepare their estates. The loss of person hours is especially crucial when sick people reach a stage where they are

incapacitated and unable to work. It is economically unjustified and morally wrong to retain such workers, as the company loses time and the affected individuals are less likely to be get their terminal benefits while alive. The regulations in the government general orders are clear, but implementation is weak.





5. An Overview of Morbidity and Mortality

5.1 Introduction

The section starts with an overview of the HIV/AIDS situation at the national level and continues with information on the situation in the sector. Data on the situation in the sector were derived from personal interviews with head-teachers. The latter part of the section discusses ministry activities on HIV/AIDS.

5.2 A National Overview of the HIV/AIDS Situation

In 1984, the first AIDS case was reported by the MoH. (Fylkesnes, 1994) In 1995-96, researchers conducted Zambia's first population-based survey of HIV prevalence by assessing HIV prevalence in Lusaka and Kapiri Mposhi districts. (Fylkesnes, 1997) From the initial identification of an AIDS case in 1984, the cumulative number of cases had risen to 200 000 by 1995. (Table 5.1) The prevalence was higher in urban (26%) than rural areas (16%). HIV infections are predominantly transmitted through sexual contact in Zambia. It was estimated that 770 000 people were living with HIV infections by 1997.

Table 5.1:
HIV/AIDS Profile for Zambia, 1994-2000

Indicator	Year	Percent/No.
First Reported AIDS case	1984	-
Urban HIV prevalence among ANC women	1995	24
Rural HIV prevalence among ANC women	1995	13
Urban Prevalence	1995	26
Rural Prevalence	1995	16
HIV Prevalence among adults (15-49)	1997	20
Estimated number of infections/day	1998	500
People living with HIV infections	1997	770,000
Reported AIDS cases	By 1995	200,000
Current Living AIDS -orphans	1998	470,000
Projected Number of AIDS oOrphans	2000	650,000

Sources: UNICEF, 1998, Orphans and HIV/AIDS in Zambia, An Assessment of orphans in the context of children affected by HIV/AIDS. Sue Lucas, 1999, Valuing Life: choices and treatments for people with HIV in Africa.

According to results from the 1994 sentinel site survey, HIV prevalence in the sexually active population ranged from 1.6% to 31.9% countrywide. Rural prevalence rates were lower on average than urban rates, normally between 10% and 15% compared to between 25% and 30% in urban and peri-urban sites. The incidence appeared to be increasing in rural areas but may be stabilising in urban areas. HIV prevalence in Lusaka levelled off at around 26% between 1990 and 1996. (Table 5.2) This could be due to a variety of reasons, including high HIV incidence being offset by high mortality or a genuine decline in incidence. (Fylkesnes, 1995)

Population-based surveys demonstrated that there were striking differences in the age distribution of HIV prevalence. Peak prevalence rates of 50% were estimated among women aged 20 to 29 years and 42% among urban men aged 30 to 39 years. Young men in the age group 15 to 29 years had a much lower prevalence than women of the same age. Evidently, more women were infected at a younger age than men. (Fylkesnes, 1997)

The 15-19-year age group provides an important category of analysis because it reveals the rate of new infections and could indicate behaviour change. The population-based survey and the 1996 sentinel site survey monitored a pronounced drop in HIV incidence in urban adolescent women (aged 15 to 19 years). In the sentinel surveillance of women aged 15 to 19 years in Lusaka urban, the HIV prevalence declined from 28% to 22% and finally 17% by 1993, 1994 and 1996, respectively. (Table 5.2)

HIV prevalence by age and sex revealed a consistently higher infection rate among young women than young men, whereas in higher age groups (30 years), men were found with higher levels (urban) or levels comparable to women (rural). The infection rates among men in the 15-19-year age group were relatively low in both urban and rural populations, whereas in higher age groups rates were still high, particularly among urban men. (Fylkesnes, 1998)

Table 5.2:

HIV Prevalence: comparing surveillance data among antenatal clinic attendants and populations-based data (1995-1996), Lusaka urban and Kapiri Mposhi rural.

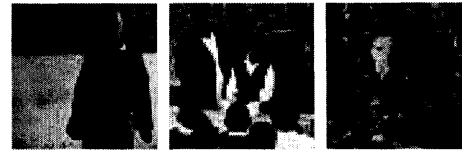
Population	Crude HIV Prevalence				
	15-19	20-24	25-29	30-34	15-39
Urban					
ANC 1993	28.6	24.0	30.3	27.0	27.1
1994	21.7	27.2	27.8	20.0	24.6
1996	17.1	26.0	40.8	18.0	26.1
Population-based					
Both sexes	9.1	26.7	43.1	36.3	25.7
Female	12.3	35.4	48.7	34.5	29.9
Male	4.5	10.7	33.4	40.0	18.3
Rural					
ANC 1994	12.4	12.2	18.2	8.6	12.6
Population-based					
Both sexes	7.2	15.7	19.2	25.2	16.7
Female	8.2	24.6	17.7	19.8	17.4
Male	5.5	5.8	20.9	31.9	15.9

Source: Knut Fylkesnes et al. *Studying dynamics of the HIV epidemic: population-based data compared with sentinel surveillance in Zambia*, in *AIDS*, 1998, 12(10).

5.3 Impressions on HIV/AIDS Situation in the Education Sector

There is no authoritative information about the incidence of HIV/AIDS in the sector. A study in 1991 showed that teachers constituted a high-risk group, with 42% of an urban sample being found to be HIV-positive. The effect on teachers' mortality is high, especially in view of the observed clustering of HIV/AIDS in the most productive age group. Precise details on the current extent of disease among teachers are not available, but anecdotal and qualitative reports point to an increasingly grave situation:

- Provincial education officers reported that mortality among teachers required them to exceed by a large margin their budgetary allocations for coffins and funerals;
- Several provinces reported two or three teacher deaths each week;



- Education officials stated that part of the reason for the "surplus" of trained teachers in towns was that they had to post an increasingly large number of chronically sick teachers to stations close to hospitals and medical services;
- School heads reported loss of class time due to prolonged illness of teachers;
- In some cases, teachers were reported to be transmitting HIV/AIDS to pupils and to much of the surrounding community;
- Education ministry statements spoke of 68 teachers dying during 1996 and 624 during 1997.

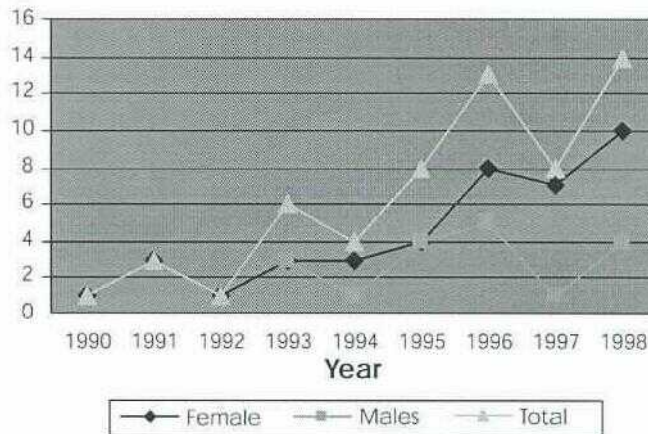
5.4 Reported Trends in Mortality among Teachers

Information collected from schools covered showed there was a discernible pattern of increasing mortality. (Table 5.3 and Figure 5.1) There was a relatively higher death toll among teachers from Lusaka than other districts. The data also portrayed a higher death rate among female relative to male teachers. The mean age at death was estimated at 36. These findings were in conformity with the observed mortality trends and patterns in the general population. Aggregate statistics have shown increasing levels of mortality in the population, with the infections being higher among females. The age distribution of HIV infections further indicates a clustering in the younger age groups. Teachers were among the occupational categories at high risk of contracting HIV infections. Because most teachers tend to be young, they are in the risk age group. Furthermore, their position of authority in society could put them at risk of infection.

Table 5.3
Reported Number of Teachers' Deaths, by Sex and Age, 1990-1999

Details	Number	Year									
		90	91	92	93	94	95	96	97	98	99
Mumbwa											
Female							1		1		1
Male						1			2	1	1
Chibombo											
Female						1				2	3
Male						2					
Chongwe								1			
Female						4		-			
Male									1		2
Lusaka									2		-
Female		1	3	1	2	2	4	6	5	5	
Male				1	2	1	4	1		1	
Aggregates											
Female		1	3	1	3	3	4	8	7	10	
Males		-	-	-	3	1	4	5	1	4	
Total		1	3	1	6	4	8	13	8	14	
Average age			30	40	-	34	44	40	47	49	36

Fig 5.1: Reported Trends in Teachers' Mortality, by Sex.



5.5 Ministry activities on HIV/AIDS

The effect of HIV/AIDS on the sector can be discerned at both household and sector levels. Affected families devote increasing proportions of their incomes on health care. In severe instances, where demands are pressing, households are forced to withdraw children from schools to help look after patients, undertake domestic chores or engage in income generating activities to supplement family earnings. Children may be denied education because of these demands. The opening of community schools is one way the ministry is trying to address the situation.

One direct effect of the HIV/AIDS epidemic is the emerging problem of orphans, whose number is estimated to be over 600 000. A high proportion of these orphans experience low living standards and high levels of morbidity and mortality. For economic or health reasons, many of them are not able to attend school. To counteract the problem of orphans, measures are being taken to train teachers in skills that will enable them to counsel and guide the children affected by psycho-social problems arising from HIV/AIDS.

Within the ministry, HIV/AIDS focal persons have been appointed, whose main task, among others, is to develop programmes for addressing the problem of HIV/AIDS. The focal persons were introduced in 1995 and have been instrumental in integrating HIV/AIDS issues into the existing curricula. Some of the activities undertaken include identification of career subjects by the Curriculum Development Centre and integration of HIV/AIDS messages into the existing curriculum. After the development of instructional materials, orientation workshops are planned where teachers will be trained in the use of the materials.

5.6 Conclusion

The risk of HIV infection is pervasive and has left no social class untouched. There are indications that teachers have a higher risk of infection because of their eminence in society (especially in rural areas). Although infection levels in rural areas are currently lower than in urban areas, communities around teachers' compounds may face a higher risk. There is a risk arising from teachers' prominence and position of power, which could result in them infecting pupils.

Data on mortality trends in school were in consonance with the national trajectory of increasing death rates. Mortality patterns such as a low age at death and higher female than male mortality confirmed this. While there is evidence of increasing mortality among teachers, there are no commensurate programmes for raising awareness in schools, save for those targeting pupils. Anti- AIDS activities are restricted to pupils and do not include teachers. Given the risks of teacher-community transmission, teachers should also be targeted by these programmes.



6. Disease and Capacity Implications at the basic school level

6.1 Introduction

Disease and the resultant capacity constraints are more discernible at the school level. This section demonstrates how disease, HIV/AIDS and other factors affect the operation of basic schools. The section looks at staffing levels, revenue and expenditure patterns in the schools and gives an overview of morbidity and mortality in the basic schools and the resultant difficulties schools are facing.

6.2 Staffing levels and qualifications

The study showed that most of the schools in rural areas had less than the required number of teachers. Poor social amenities and especially the lack of accommodation for teachers were major reasons for teachers shunning rural areas. Further, the cumbersome procedure for recruitment also contributed towards deficiency of staff in rural areas. Despite making representations to district and provincial offices for the recruitment of teachers, most of the schools had not been assigned teachers. The requirement that newly trained teachers could only be recruited after they had been put on the payroll had resulted in an ironic situation where despite there being many newly trained teachers, schools were running with less than the required staffing. Headmasters complained that student teachers who had graduated as far back as 1997 had not been employed by the ministry. The situation had further been compounded by the time it took for the ministry to replace retired teachers. There were instances where teachers who had retired over three years before had not been replaced.



An examination of teachers' professional qualifications showed that most had attained the Primary Teachers' or Zambia Primary Certificate (PTC, ZPC), followed by those with the Zambia Basic Education Certificate (ZBEC). (Table 6.1) There were very few university graduates. Of the total sampled schools there were only 17 teachers with a degree, over three quarters of whom were based in Lusaka.

Mumbwa had the highest number of untrained teachers, followed by Chibombo, with Chongwe having the lowest. The distribution of teachers across districts followed the national pattern whereby remote areas had lower staffing levels than urban schools. Untrained teachers were paid from internally generated funds. As expected, Lusaka had a higher proportion of better-trained teachers and did not have any who were untrained.

Table 6.1
Teachers' Professional Qualifications by District

Professional Qualification	Mumbwa	Chibombo	Lusaka	Chongwe	Total	
					No	%age
Bachelor of Arts	1	0	13	4	17	1
Zambia Basic Education Certificate	46	42	103	13	204	17
Prim Teach/Zambia Prim Cert	26	88	228	101	443	38
Lower Primary (L2)	1	5	8	6	20	2
Upper Primary (U2)	0	6	7	3	16	1
Health Economics	9	10	4	6	29	2
Advanced Diploma	17	12	67	36	132	11
Untrained Teacher	30	85	0	13	128	11
Others	2	6	4	0	12	1
NS	78	51	15	24	168	14
Total	132	254	449	182	1169	100

Others includes ES6/T3 and APC

6.3 Revenue Generation and Expenditure Patterns

Revenues

Schools reported serious financial problems which had imposed constraints on their operations. As a result, the schools were largely dependant on their own internally generated resources to fund most recurrent needs. Parent-teacher associations (PTA) and general purpose fund (GPF) contributions were the key sources of revenue. Both these sources, however, generated very little for schools because many pupils were unable to pay. Even in cases where a pupil was able to pay, the lack of ways and means of enforcing payments had further compromised the ability of schools to collect revenue.

The problem of fee paying notwithstanding, schools had undertaken measures to tighten control over PTA funds. Previously, PTA funds were controlled by a PTA-appointed treasurer from among the parents. This has been changed and schools now appoint a teacher to take charge of the funds. The community has reacted strongly to this and in most cases has delayed the handover of funds from the community to schools. Communities do not seem to have confidence in the teachers and feel that money will not be well accounted for. There is a danger that some parents may be less interested in contributing to schools given their suspicions about the ability of teachers to account for funds.

Due to the limited revenues generated from fees, some schools were trying other means of income generation. These included selling agricultural products from school gardens. Donors and NGOs were another important source of funds for schools. Prominent among these were the Micro Projects Unit (MPU), Japanese International Co-operation Agency (Jica), Development Fund for International Development (Dfid) and Canadian International Development Agency (Cida).

Although problems of enforcing payment were general and limited schools' ability to function, the problems of orphans was exerting an additional burden. Orphans, a vulnerable group, were exempted from paying school fees. Some organisations have, therefore, moved in to provide help to orphaned children. The help takes the form of paying school fees and other requisites. Prominent among these organisations are Christian Children Fund (CCF) and World Vision (WV).

Expenditure Patterns

An examination of expenditure patterns shows a common pattern among schools. Construction expenses consumed the largest proportion of revenues. This reflects problems of the maintenance backlog that has resulted from a



protracted period of under-funding, especially capital investment in the public education sector. Hence, most of the schools were spending their meagre resources on maintaining old structures. Sources of funding for capital projects were principally donors, with supplementation from internal sources. While government funding had dwindled, part of the little that schools were generating from levies was being diverted to meet capital costs.

Other than capital expenditure, transport and stationery costs were also high. Ideally schools would not be expected to spend much money on stationery as this, in normal circumstances, would be provided by the state. However, government's fiscal difficulties have forced a reduction in social sector funding and thus pushed schools into purchasing their requisites. An examination of trends in transport costs showed that most of the trips were made by headmasters. In some instances, a headmaster could make up to nine trips within a space of three months.

Schools were also paying significant amounts to district offices for sports and home economics affiliation. Teachers contested these affiliation costs. They said the costs were not justified and that districts were not able to account for the fees. Despite paying the fees, schools were still required to pay for participation, sporting facilities, accommodation and food costs during sporting events.

Given the increasing incidence of long-term illnesses in schools, illness and funeral-related expenses would be expected to feature prominently among the expenditure items. There was, however, no correlation between the number of long-term illnesses and deaths and expenditure. Paucity and incompleteness of data explained much of the observed mismatch. During discussions, teachers indicated that schools were facing constraints meeting funeral expenses. Without reliable government funding, medical and funeral expenses were exclusively met by schools and communities. This affected the functional capacity of the schools by diverting resources that could have been spent on the other pressing school needs.

6.4 Prevalence of Illness and Death

As indicated in section five, the study revealed that almost all the schools visited had recorded deaths. There was a near-uniform pattern of schools losing teachers to death or through transfer on medical grounds. From the interviews conducted it was evident that most of the recorded mortality cases had been due to HIV/AIDS-related conditions. Teachers who had lost a spouse would usually move to another school. This left the sending school with few staff while the receiving school took in ill teachers. Long-term illnesses had a deleterious effect on the capacity of schools. Among the outcomes were reduced contact time between teachers and pupils, worsening teacher-pupil ratios, increased levels of absenteeism, loss of person days to illness and worsening staffing deficiencies.

6.41 Staffing Deficiencies

Staffing deficiencies were prevalent in all the districts covered. (Table 6.4) In Chibombo, the deficiencies ranged from three to 10, while those for Chongwe were between four and 13. Mumbwa and Lusaka, while having deficiencies of between two and 11, had schools with excess staff. In Mumbwa, one school had an excess of seven teachers, while three schools in Lusaka had excesses of three each. The extremely high number of excess staff at Kalilwe Basic School in Mumbwa reflected the influence of disease where sick teachers had been transferred to the school because it was located in the town centre and hence close to the hospital.

While unfavourable working conditions in rural areas explained a high proportion of staffing deficiencies, the increasing burden of disease had compounded the situation. The prevalence of long-term illnesses and accompanying mortality had reduced the health status and number of teachers, thus raising the level of staff deficiencies. In Chibombo district the proportion of the deficit explained by death ranged from 20 to 100%. (Table 6.4) At one school, the number of teachers who had died was equal to the level of staff deficiency. In half the cases, mortality increased staffing deficiencies by more half.

In Mumbwa, one school had an excess of seven teachers, though most of these were terminally ill and thus unavailable for teaching. In the other schools deficiencies ranged from two to 14. The situation was the same for Chongwe district, where deficiencies ranged from four to eight. (Figure 6.2) At one school, the number of teachers that had died was more than the deficiency. Lusaka district had more schools with excess staff than other districts. (Figure 6.3) This buttresses the point made earlier about gravitation of teachers towards areas with better social amenities.

The increasing prevalence of long-term illnesses and death was contributing to inequities in staffing levels. Waves of teachers were moving from rural schools to other areas perceived to have better health facilities. At the onset of an illness, teachers would seek care from nearby health facilities. As their condition deteriorated they started gravitating towards better health facilities, which could be within the area. However, as the disease progressed further and entered an advanced stage, patients opted for perceived better health facilities, most often in urban areas. This resulted in reallocation of the affected teachers from their original schools to schools close to health facilities in urban areas.

The pressures that the increasing burden of diseases and illness are exerting on staffing levels necessitate the institution of programmes to alleviate the situation. The reported excessive staffing levels in some schools could be an indicator of this already happening, though not in an organised manner. Such a response mechanism is likely to favour urban-based schools, which are able to attract and retain staff, while rural based schools would be disadvantaged.

Fig 6.1: Contribution of Death to Staff Deficiency, Mumbwa district.

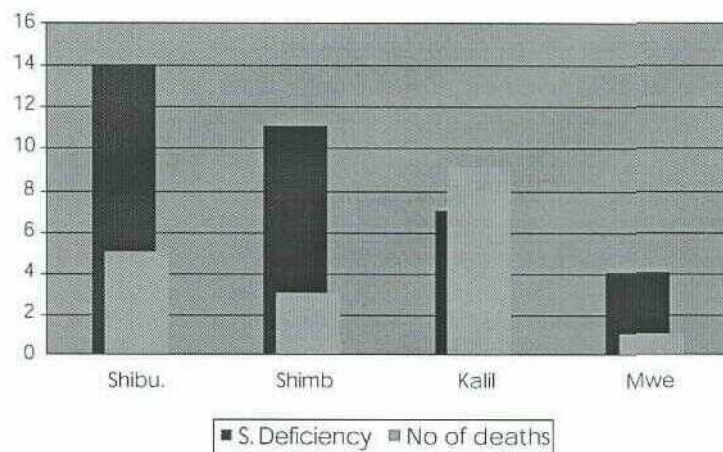


Fig 6.2: Contribution of Death to Staff Deficiency, Chongwe district.

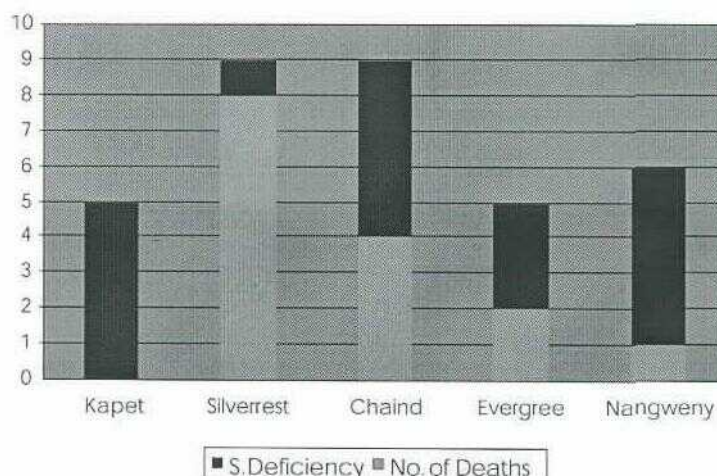




Fig 6.3: Contribution of Death to Staff Deficiency, Lusaka Urban district.

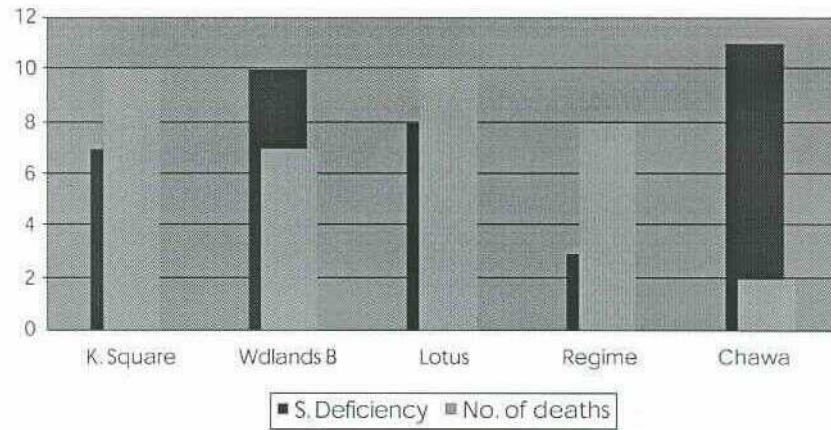


Table 6.4
Establishment and Actual Staffing Levels, by Schools

School	Staffing Levels		Deficiency/Surplus		
	Establishment	Actual Staffing	Def.	Death related	
				No.	% Def.
Chibombo					
Keembe	20	10	10	2	20
Chibombo	32	36	4	3	75
Chisamba	26	20	6	1	17
Moomba	27	20	7	3	43
Mulungushi Agro	25	19	4	2	50
Mumbwa					
Shibuyunji	35	21	14	5	36
Shimbizhi	30	19	11	3	27
Kalilwe	44	53	+7	9	126
Mwembezhi	24	20	4	1	25
Chibuluma	15	12	3	3	100
Chongwe					
Kapete	15	10	5	0	-
Silverrest	33	24	9	8	89
Chainda	25	16	9	4	44
Evergreen	15	10	5	2	40
Nangwenya	20	16	6	1	17
Lusaka					
Kaunda Square	47	40	7	10	143
Woodlands B	38	28	10	7	70
Lotus	60	52	8	10	125
Regiment	38	41	+3	8	-
Chawama	64	53	11	2	18
Total					

6.42 Increasing Absenteeism

One immediate outcome of the widespread incidence of illness and death is an increase in levels of absenteeism. What seems to be happening is that at the onset of an illness, individuals absent themselves from work. As an illness worsens, affected individuals get sick leave.

In Chongwe, the only district for which comprehensive data was available, the mean number of days that teachers were absent in a term was higher among females (10) than males (5). The mean number of days male teachers were sick was 13 against 14 for females, while the corresponding percentages for Mumbwa were 18 and 10.

Interviews and record reviews, where available, showed that there had been an increase in absenteeism in almost all the schools. Among the principal factors explaining this were increased poverty levels in the country, which had forced people into looking for alternative means of supplementing incomes. Most of the teachers ran assorted businesses. Rising morbidity and mortality also explained part of the increase in absenteeism. The incidence of disease contributed to absenteeism from two angles. First, illness of teachers can directly lead to absenteeism. Second, provision of care for sick relatives can also result in teachers absenting themselves from work. Numerous stories were recounted of teachers who had been absent for a long time while they attended to sick spouses.

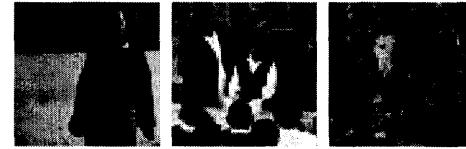
An examination of information on the incidence of absenteeism showed that there was a higher incidence of absenteeism among female than male teachers. This pattern was consistent across all the schools and the differences were more discernible the longer the period of absenteeism. Females, because of their reproductive demands, carry a disproportionate burden of ill health. Women are also primary care givers in households, and thus provide most of the care when a household member is ill. This observation was further extenuated by the finding that more women sought permission to be away from work than men. The difference between male and female teachers seeking permission to be away from work was especially significant the longer the period for which permission was sought. This could indicate that more females took time off due to long-term illnesses affecting either themselves or other household members.

6.43 Person days lost to illness



Schools in Chongwe had registers which recorded attendance of teachers. From these registers the means number of days teachers were absent from school because of illnesses was computed. These numbers were then multiplied by the total number of teachers who were ill at the time of data collection to get the total number of person days lost due to illness. The computation assumed a 65-day term. This was done for all the schools and the results are shown in Table 6.5.

The computation showed that the percentage of persons lost to illness ranged from 14 to 42 for Chongwe district. The range for Mumbwa, Chibombo and Lusaka was between 14 and 84. Using mean values from a district has an implicit assumption that values for the other districts are not very different from these. This is not completely off the mark, because Chongwe has both rural and urban attributes and could thus reflect a combination of experiences in the other three districts. Interviews with headmasters confirmed there had been an increase in illness-induced absenteeism among teachers. These illnesses were a combination of both short- and long-term conditions, with the latter showing prominence



in recent years. It was further established that most of the long-term illnesses were tuberculosis-related. This poses challenges to the sector because it implies that teachers are incapacitated for a long time before dying.

A simulation of the effect of HIV/AIDS on absenteeism distinguishes three levels of infection: the early stage, where an intermittent illness leads to short-term absenteeism; the middle stage, where the condition worsens and there is protracted absenteeism; and the final stage, full-blown AIDS, where an infected individual is bedridden and ceases reporting for work. Ideally, the school authorities' reaction to the problem would be guided by these illness phases. Unfortunately, this is not happening and cases of terminally ill teachers who had not been reporting for over a year were not uncommon. This not only poses problems for the school but also does not help matters for the affected families, who in most cases are financially strained long before a relative dies.

Table 6.5
Number of Person Days lost due to Illnesses by Schools and District.

District and Schools	No Person day in one term	Person days lost to Illness	Proportion of Person days lost to Illness
Chongwe	1170	168	14.4
Mumbwa	1625	182	8.9
Chibombo	195	42	4.6
Lusaka	2210	304	7.3
Total	5200	696	13.4

Values for Chongwe district are based on observed average number of times teachers were absent. For the other districts, computations are based on observed number of teachers who were currently ill and average level of sick leave from the two Chongwe schools. Calculations assume a term of 65 days.

6.44 Increasing Teacher-Pupil ratios

An immediate result of the high prevalence of long-term illnesses and death is movement of teachers towards better-served areas. The movements have resulted in death being one of the primary reasons for staff attrition. (Table 6.7 and Figures 6.4 to 6.7) For both Chongwe and Lusaka Urban, death was the major reason for staff attrition, while it was second in Chibombo. For Mumbwa it was the fourth major reason.

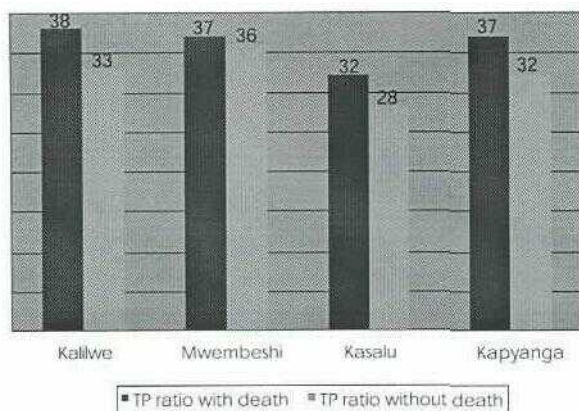
One immediate outcome of illness- and death-induced staff movements are worsening teacher-pupil ratios. Historically, teacher-pupil ratios were favourable in rural areas not because there were more teachers, but because of smaller populations. Urban areas, on the other hand, were densely populated and as such pressure was exerted on school facilities, resulting in high teacher-pupil ratios.

The increasing incidence of illness and death is raising teacher-pupil ratios in both rural and urban areas. Table 6.6 shows the effect of death on these ratios. In all the schools the ratios were made worse by the mortality factor. Thus, Keembe, Chibombo and Chisamba schools, whose teacher-pupils ratios were 56, 33 and 47, would have had better ratios of 46, 31 and 45 had no teacher died. In some cases, the effect of death on teacher-pupil ratios was quite dramatic. For instance, Silverest had a ratio of 65 with death, which reduced to 50 after removing the effect of death. The story was the same for Lusaka. At Woodlands B Primary School, ratio without death was 35, which increased to 44 when death was added. For Mahatma Gandhi, St Monicas, Kaunda Square and Lotus, the ratios changed from 41, 36, 32, and 43 to 47, 52, 40 and 51, respectively.

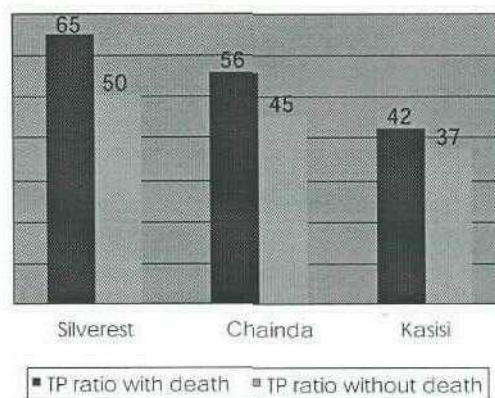
Table 6.6:
Teacher-Pupil Ratios by school

School	No. of Teachers	No. of pupils	Teacher-Pupil Ratio	
			With death	Without death
Chibombo				
Keembe	10	560	56	46
Chibombo	36	1200	33	31
Chisamba	20	1025	47	45
Mumbwa				
Kalilwe	53	2024	38	33
Mwembeshi	20	750	37	36
Kasalu	20	650	32	28
Kapyanga	16	600	37	32
Chongwe				
Silverest	24	1550	65	50
Chainda	16	900	56	45
Kasisi	22	932	42	37
Lusaka				
Woodlands B	28	1242	44	35
Mahatma Ghandi	51	2400	47	41
St Monicas	45	2335	52	36
Kaunda Square	40	1601	40	32
Lotus	52	2654	51	43

Teacher Pupil Ratios with and without death, Mumbwa.

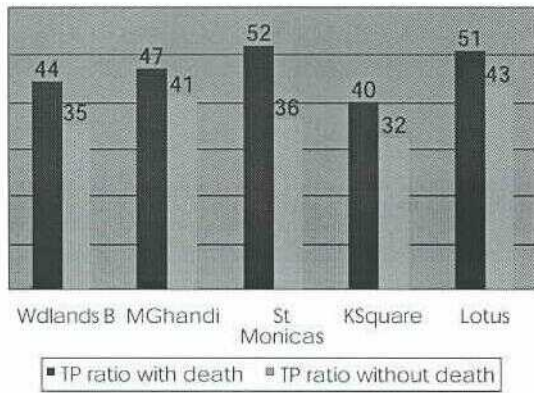


Teacher Pupil ratios with and without death, Chongwe.





Teacher Pupil Ratios with and without death, Lusaka.



Teacher Pupil ratios with and without death, Chibombo.

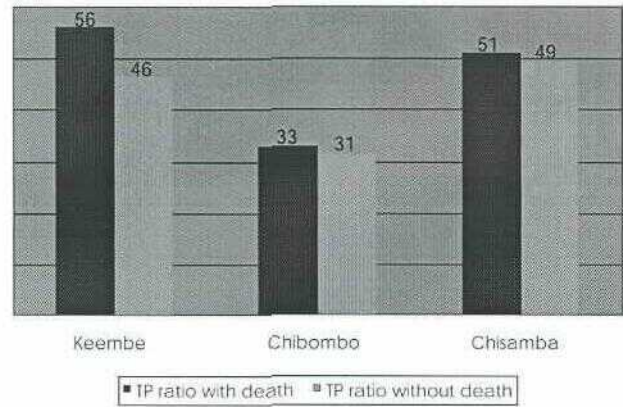


Table 6.7
Sources of Staff Movements out of School by District

District and Cause of Movement of school	Number	Percentage
Chibombo		
Promotion/normal transfer	15	56
Deceased	4	15
Long- term ill	2	7
Accommodation	3	11
Others	3	11
Mulungushi		
Promotion/normal transfer	20	77
Deceased	3	11
Accommodation	-	-
Retired	2	8
Others	1	4
Woodlands B		
Promotion/normal transfer	21	30
Deceased	7	10
Accommodation	40	56
Retired	3	4
Others	-	-
Regiment Basic		
Promotion/normal transfer	8	24
Deceased	8	24
Accommodation	17	52
Retired	-	-
Others	-	-

Fig 6.4: Sources of Staff Attrition, Lusaka Urban District.

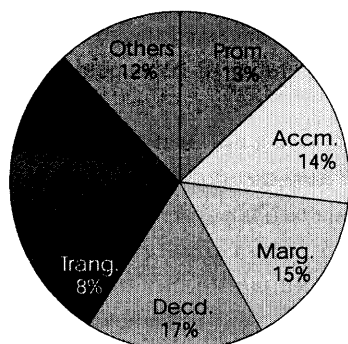


Fig 6.5: Sources of Staff Attrition, Chibombo District.

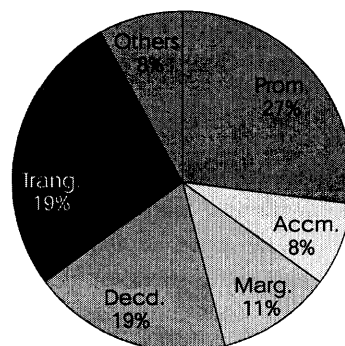


Fig 6.6: Sources of Staff Attrition, Chongwe District.

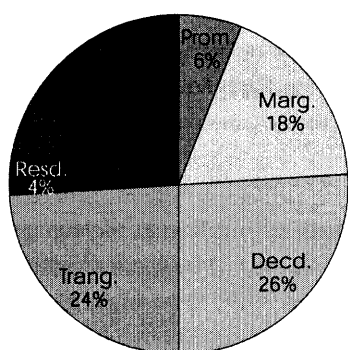
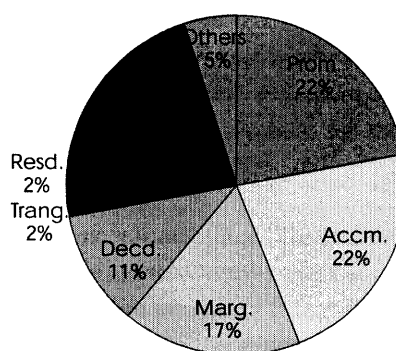


Fig 6.7: Sources of Staff Attrition, Mumbwa District.



6.5 Conclusions

Inequities in location of teachers

The study has shown disparities in the distribution of staff across regions. Schools in urban areas have better staffing levels than rural areas. However, although there are more teachers in urban areas, teacher-pupil ratios are high on account of the high demand on school facilities in these areas. The staffing situation in both urban and rural areas is being worsened by the increasing incidence of illness and death. Mortality affects directly by increasing teacher-pupil ratios.

The prevalence of long-term illnesses has resulted in new staff movements, where sick teachers prefer being in schools close to health facilities. Hence, schools in urban and peri-urban areas are recording higher staffing levels than those in rural areas. However, these high staffing levels, mask the problem of ailing teachers. Although a school may present a high staffing level, a number of these could be sick.

Financial constraints

Irregularities in levels and timing of financial remittances to schools have affected their functional capacity. Schools mainly only have a payroll and hardly any other resources. Given the financial crises arising from the effects of increasing mortality, schools have devised ways and means of meeting funeral costs. This entails setting up distress funds from which members can draw. The problem of limited funding is especially acute in rural areas, which have no recourse to the ministry. Schools based in Lusaka are able to access resources by making direct representations to ministry headquarters.



Increasing absenteeism

An immediate effect of the prevalence of illnesses is the increasing rate of absenteeism among teachers. This is reducing contact time between teachers and pupils. The problem of absenteeism has been further compounded by the laxity with which heads of departments enforce government general orders on absenteeism. Furthermore, illness-induced absenteeism has compounded an already prevalent problem of moonlighting among teachers.

The Influence of Disease

Schools in rural areas have traditionally had staffing deficiencies, while those in urban areas have been better staffed. Incidences of long-term illnesses and death were aggravating the distribution of staff over schools within districts and among districts. Teachers were moving from areas with poor social amenities to better-serviced areas. These movements perpetuated inequities in the distribution of staff across schools, favouring urban-based schools at the expense of those in rural areas.

Illness-induced movements were a major cause of staff relocations. It should be expected that as disease influences become acute, more teachers will move to areas with better hospitals. The emerging staffing deficiencies and inequities are likely to increase.

The ultimate result of these influences of disease and death will be a deterioration in the output quality of the education system. Worsening teacher-pupil ratios are an apt illustration of this deterioration. Even where teacher-pupil ratios are within reasonable bounds, increasing absenteeism of teachers will still have negative ramifications for the quality of graduates from the sector.

The burgeoning number of orphans has implications for the capacity of the education sector. *On one hand, delivery modes will have to be modified to take care of the special circumstances of orphans. On the other hand, the orphan problem is part of a social crisis which eats away at the capacity of communities to the extent that they are unable to contribute towards education expenses. Hence, while government policy is moving in the direction of increasing the proportion of household funding for the education sector, the problem of orphans produces opposite forces, which limit the extent to which households can meaningfully contribute towards education.*

7. Responses to the threat of disease

7.1 Introduction

Long-term illnesses and death in the sector are inducing coping mechanisms. This section looks at these mechanisms as they are emerging in the schools. Among the responses considered here are suspension of classes, combination of classes, engagement of part-time teachers, pupil transfers and overstaffing.

7.2 Suspension of selected subjects

Some schools have reacted to the shortage of teachers caused by long-term illnesses and death by suspending selected subjects. At Kaunda Square Basic School in Lusaka, for instance, home economics teachers have been allocated other subjects. Health economics is no longer taught. There was a similar experience at Kasisi, where home economics had been suspended, together with industrial and arts subjects. Another strategy adopted, in addition to the suspension of classes, is the assignment of single subjects to specific teachers, who then take these subjects for all classes.

These mechanisms go against ministry policies in the education sector in various ways. While efforts are being made to change the curriculum from a purely academic orientation to one that is practical-orientated, the decision to drop home economics and industrial and arts subjects negates this. The option of teachers specialising in given subjects may also compromise the quality of education because these teachers were not originally trained to teach single subjects.

7.3 Combination of classes

Schools are also reacting to the problem of teacher shortages by combining classes. This involves merging streams. As a strategy of augmenting available staff, headmasters and their deputies are also teaching. In Lusaka, Woodlands and Regiment schools had merged three and four streams into one and two streams, respectively. (Table 7.1) There were similar experiences from Chibombo, Mumbwa and Chongwe areas, where various streams had been combined into either one or two streams. An immediate result of this strategy was that schools had larger classes. Furthermore, the combined classes resulted in high teacher-pupil ratios, which negatively affects quality of education.

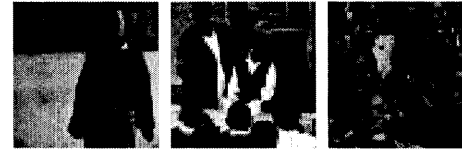
7.4 Engagement of part- time teachers

Where schools are able to, they are engaging teachers who are paid from internally generated funds. Engagement of part-time staff could entail recruiting retired or untrained teachers. While this method may help alleviate pressures on the school, it also results in the diversion of resources that could have been spent on other areas of need in the schools.

Given the disparities in the ability of the schools to generate their own incomes, there are differences in the extent to which schools are able to accomplish this. While part-time teachers engaged by schools in urban areas are paid in cash, most of those engaged by rural schools are sometimes paid in kind. Such payments are often in the form of agricultural produce. In extreme circumstances, community members have volunteered to teach without payment.

Table 7.1:
Combination of Classes, by School and District.

School	Classes Combined
Lusaka	
Woodlands	Three streams into one
Regiment	Two streams fused into four
Chawama	Four streams into two
Mumbwa	
Shimbizhi	Three streams into one
Shibuyunji	Four stream into two
Chibombo	
Chisamba	Three streams combined into one
Chibombo	Four streams combined into two
Chongwe	
Chainda	Three streams into one
Evergreen	Two streams into one
Silverest	Three streams into one



7.5 Requesting pupils to transfer

Some schools that have other schools in their vicinity have tried to resolve the problem of limited staff by urging pupils to shift to other schools to reduce the pressure. This is only feasible in urban areas, which are likely to have more schools within reasonable distance of one another. Following the opening of a new school in New Avondale, the average class size at the Chelston school, which is within reasonable distance, dropped from about 70 to 50 pupils per class. Schools in rural areas do not have this option because there is often only one school for a village.

7.6 Overstaffing

An examination of staffing levels as indicated in section 6.0 shows that some schools in urban areas had more teachers than allowed by establishment. At a glance this may seem so, but this overstaffing is a product of the increasing burden of disease in the country. As already indicated, teachers are moving from remote areas to schools near health facilities. As a result, schools in urban areas showed excessive staffing levels. Some schools were actively recruiting teachers as a way of hedging against the risk of illness and death.

7.7 Conclusion

Some of the copying mechanisms that schools were adopting, while providing short-term respite from the effect of increasing morbidity and mortality, were working against policy changes in the sector. The study showed that in cases where subjects had been suspended, these tended to be those in technical and vocational categories. This works against government moves to reorientate curriculum content from academic to more practical skills-based.

Other copying mechanisms such as combination of classes were also compounding the problem by negatively affecting the quality of education as a result of high teacher-pupil ratios, which reduced effective contact between teachers and pupils. The effects of such practices may take long to be felt, but the end results will linger. This will translate into poor

quality of graduates from educational institutions, with accompanying negative effects on the quality of the labour force.



In other cases, schools, especially those in urban areas, were hedging against loss of teachers from death by over-employing. The effects of this practice are double edged. Sending schools remained with less staff, while the receiving institutions had to contend with the sick teachers. Staff excesses in urban areas were, to some extent, a reflection of this trend.

8. Recommendations

Synergy of Financial Pressures and Disease Burden

While several factors could be cited as being responsible for constraining the education sector's capacity, financial pressures are primary. General economic decline has had negative ramifications on government's fiscal position. The effect has been especially acute in the social sector. In the recent past, the rising burden of disease has combined with economic factors to exert excessive pressures on sector capacity.

As the ministry tries to resolve functional constraints with various policies aimed at reforming the financing of the sector, it is imperative that similar programmes to forestall the effect of increasing morbidity on educational capacity are implemented. A precursor to the evolution and implementation of such policy is awareness among policy makers that there is a problem. Without data to show policy makers that the sector is threatened by the increasing incidence of disease, it will be difficult to institute effective policies and programmes.

Risk of teacher-pupil infections

Teachers are among professional categories that have a high risk of HIV infection, partly arising from their positions of authority in society. The risk is especially high in rural areas, where teachers enjoy a high social standing. Although there are anti-HIV/AIDS programmes in schools, these are restricted to pupils. Anti-AIDS could be extended to teachers either by reorientating these programmes to include teachers, or designing parallel programmes specifically targeting teachers. In some districts such activities were already underway, organised by district educational authorities.

Enforcing Government Regulations on Long-term Illnesses

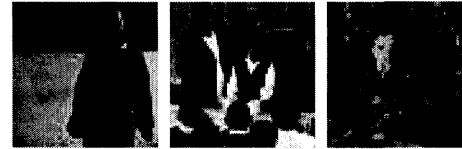
Although ministry regulations are very clear on the procedure to be taken in the case of a member of staff that had been ill for a long period, these rules are hardly ever enforced. Very often teachers continue drawing full salaries long after they have stopped working. The laxity with which regulations are enforced has to be checked, given the high level of morbidity and mortality in the population.

While the right of individuals to employment irrespective of their HIV status is recognised, it is equally important to take into account pressures induced by the burden of disease on the functional capacity of the sector. It is hard to justify the continuation of payment for workers who are terminally ill, especially when they become incapacitated and are not able to work. Money spent on terminally ill staff could well be spent on recruiting additional teachers to improve quality of learning. Furthermore, it would serve terminally ill teachers' interests to get their dues in time.

Influence of disease on Education Policy Change

The ministry has undergone various policy changes over time, which have, however, been hampered by sluggish economic performance. And to this extent, education sector documents take notice of the direct effect of the economy on policy change in the sector. While the sector is wary of economically induced policy disruptions, due





attention is not given to the equally disruptive effects of disease on both inputs and outputs of the sector. The effects of disease and mortality and especially HIV/AIDS ought to be factored into sector policies.

Replacing Teachers

Illness and death of teachers from AIDS has a deleterious effect on the quality of education and efficiency of the system. The loss of experienced teachers may have to be compensated for by special measures. These may include open community schools – which are already in operation -- better teacher guides, and more in-service support and training. In rural areas, schools are engaging part-time teachers who are paid from school coffers. There are isolated cases of retired teachers volunteering their services at schools that have very few teachers. There could be more of such responses from the community if awareness activities were scaled up so that communities appreciated the importance of supplementing teachers' efforts. Given that most people retire to villages, schools in rural areas were particularly well placed to mobilise these resources.

Staff Allocation Inequities

Geographical inequities in staff allocation have for a long time beset the education sector. Poor socio-economic conditions in rural areas have resulted in teachers preferring to work in urban areas. The study has shown that the increasing burden of disease is exacerbating the inequities. Ailing teachers opted to move to urban areas, which had had better health facilities. Ensuring that government general orders on illness were adhered to would help resolve staff inequities.

Information systems

For policy and programmes to integrate morbidity and mortality factors, data showing the current status and likely trends of illness and death in the sector ought to be developed and disseminated among all key players. In the absence of such information it is very difficult for policy makers to appreciate the gravity of the situation, let alone act to integrate these issues into sector policies and programmes.

The paucity of data in the sector makes it very difficult to gauge the extent of the problem. Data problems are identifiable at almost all the levels. The experience of Chongwe, however, showed that it was possible to collect pertinent data at a reasonably low cost. Awareness of the gravity of the situation and commitment are key to success. As a starting point, the ministry could build on the already existing information systems. Although some schools had reasonably good data on illnesses and deaths, most did not. Even among those that had collected such data, there were problems of transmitting them to districts. Thus, in addition to improving the data situation in schools, mechanisms for transmissions of such data ought to be improved. Much as one would appreciate operational constraints faced by school, it is also true that transport costs featured prominently in the expenditure profiles of most schools. Transmission of data could thus be done using the existing transport modes.

There should be improvements not only in the compilation of data at schools, but also in ensuring standard data collecting formats. Efforts should not solely be put into inventing new mechanisms for data collection and compilation, but also into improving current arrangements. Schools have log books showing staffing levels and trends. These log books in the some cases were not comprehensively filled in and in other cases they were missing. Schools could be compelled to ensure that data for log books are collated in all schools. Statistical booklets were designed to collect valuable information, which if consistently and comprehensively utilised could improve the sector data base. The current material used for these booklets is, however, expensive and it may not be feasible for a cash-strapped ministry to continue with them. Other low-cost materials could be considered for data collection.

With the exception of Chongwe, none of the districts had attendance data. Given the rising cases of absenteeism either because of illness or other reasons, it is imperative that data on attendance also be collected. The experience of Chongwe could be replicated in other districts. There is also a case for a collecting information on long-term illness.

Reference

Baggaley R, Godfrey-Fausset P, Msiska R, et al., 1994, *Impact of HIV on Zambian Businesses*, British Medical Journal, 309:1549-50.

Bond V. eds. 1994, AIDS and the Family, Report of the 4th National AIDS conference, Lusaka.

Booth D, Milimo J, Bond V. 1996, Coping with cost recovery: A study of the social impact and response to cost recovery in basic services (Health and Education) in poor communities in Zambia. Working paper 3, Task Force on Poverty Reduction, Stockholm.

Cohen, D. 1993, The Economic Impact of the HIV Epidemic, United Nations Development Programme, New York.

Flykesnes K, Brunborg H, Msiska R. 1994, The socio-economic impact of AIDS - Zambia: the current HIV/AIDS situation and future demographic impact, NASTLP, Ministry of Health, Lusaka.

Flykesnes K. 1995, Overview of the HIV/AIDS situation in Zambia: Patterns and Trends. NASTLP, Ministry of Health, paper presented at the 5th National AIDS Conference, Lusaka.

Flykesnes K, Sichone M, Kasumba K. 1997, Population-based HIV study using Saliva Specimen: Socio-demographic determinants of infection in Zambia. Presentation at dissemination seminar: New Epidemiological, Demographic and Behavioural Research Findings related to the HIV/AIDS Epidemic in Zambia, Epidemiology and Research Unit, National AIDS/STD/TB Programme.

Government of the Republic of Zambia, 1990, General Orders

Flykesnes K., *Studying dynamics of the HIV epidemic: population based data compared with sentinel surveillance in Zambia*, AIDS, 1998 12(10)

Kelly, M.J., 1998, Primary Education in a Heavily Indebted Poor Country. The Case of Zambia in the 1990s

Ministry of Education, 1996, Educating our Future. National Policy on Education

Musonda, R, Ndhlovu Z, Kasumba K, Flykesnes K, 1997, Trends of HIV infection and the representativity of key Sentinel Population (CBW) Using the Population Based Data as Reference.

Saasa, O. 1997, Capacity Building for Economic Development in Zambia: Challenges and Prospects

World Bank, 1997, The Impact of AIDS on Capacity Building - Partnership for Capacity Building in Africa

UNDP, 1998 Capacity Assessment and Development In a Systems and Strategic Management Context, Technical Advisory Paper number 3 Management Development and Governance Division Bureau for Development Policy

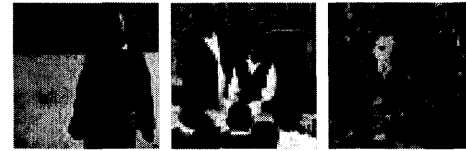


Table A01

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Chongwe District

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Chainda								
Death	4	-	-	ST Illness	-	-	-	At school
			F	LT Illness	-	Alive	Dead	"
			M	LT Illness	-	Alive	Dead	"
			-	Malaria	-	Alive	-	"
Illness	3	-	F	LT Illness	-	-	-	"
			F	LT Illness	-	-	-	Away
			F	LT Illness	-	-	-	Away
Chongwe								
Death	8	-	5 F	LT Illness	1994	-	-	
			3 M	"	1997	-	-	
					1999	-	-	
Kasisi								
Death	3	-	1 M	LT Illness	2000	Alive	Alive	At school
			2 F	ST Illness	1989	Alive	-	At school
				LT Illness	1989	-	-	Away
Evergreen								
Death	2	-	-	-	-	-	-	At school
			-	LT Illness	-	Alive	-	At school
Illness	1	-	F	LT Illness	-	Dead	Ill	Away
Silverest								
Death	7	48	F	LT Illness	-	Alive	-	Away
		42	M	TB	-	"	-	At school
		24	M	Suicide	-	"	-	At school
		-	F	TB	-	"	-	At school
		46	"	LT Illness	-	"	-	At school
		-	"	LT Illness	-	"	-	-
		38	"	LT Illness	-	"	-	-
Illness	3	-	F	LT Illness	-	"	"	At school
			"	LT Illness	-	"	"	
			M	"	-	"	"	
Chilambana								
Death	3	49	F	-	2000	-	Ill	Away
		26	F	TB	1997	-	-	At School
		-	M	Malaria	1999	-	Alive	"
Illness	3	-	F	Lt Illness	-	-	Alive	"
			F	"	-	-	-	"
			M	"	-	-	-	"
Chitemalesa								
Death	1	-	F	Lt Illness	1996	Alive	-	At School
Chinyunyu								
Death	2	42	F	Lt Illness	2000	Dead	-	At School
		35	M	"	2000	Alive	-	"
Illness	1	28	F	"	-	Alive	-	"
Nangwenya								
Death	1	-	F	Lt Illness	-	-	-	-
Bimbe								
Death	1	38	M	LT Illness	1993	Dead	Dead	Away

Table A02

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Mumbwa District

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Kapyanga								
Death	3	-	-	-	-	-	-	-
Illness	1	41	F	-	-	Alive	-	-
Chibuluma								
Death	2	- 35	2M	LT Illness	97 99	Dead Dead	Alive Alive	At school "
Kalilwe								
Illness	6	-	4F	-	-	2 Dead	2 Dead	At school
Death	9	-	2M	-	-	-	1 Ill	"
Shibuyunji								
Death	5	40 44 38 30s	M F M F	LT " " "	96 95 96 94	Alive Dead Alive Alive	Alive Alive Alive Alive	At school " " "
Illness	2	38 33	- -	LT Illness "	- -	Alive "	Ill "	Away from school "
Mwembezi								
Death	1	29	M	LT Illness	2000	Dead	Alive	At school
Illness	1	41	M	TB	-	Alive	"	"
Kasalu								
Death	3	28 36 29	F M M	LT Illness LT Illness TB	1999 1997 1998	Dead Alive Alive	Dead Alive Alive	At school At school At school
Illness	2	M F	28 26	TB TB	- -	- -	- -	At school At school
Shimbizhi								
Death	3	-	-	LT Illness	-	-	-	-
Illness	1	F	35	"	-	Alive	-	At School

Table A03

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Chibombo

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Mulungushi								
Death	1	-	M	ST Illness	1994	Alive	Alive	At school
Death	1	20	F	ST Illness	1998	Dead	Dead	At school
Illness	1	29	F	ST Illness	-	-	-	At school
Chisamba								
Death	1	40	M	-	1994	Alive	Alive	At school
Chibombo								
Death	2	38	F	LT Illness	1999	-	Dead	At school
Illness	1	-	M	LT Illness	1996	-	Dead	"
Illness	1	-	F	"	-	-	-	Away

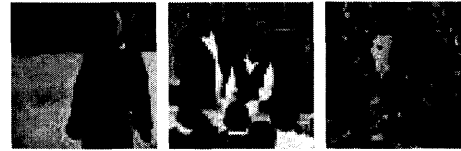


Table A03 contd.

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Chibombo

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Moomba Death	5	24	F	LT Illness	1998	Dead	Dead	Away
		24	F	"	1999	-	-	-
		29	F	Lt Illness	-	-	-	-
		26	F	"	-	-	-	-
		28	"	"	-	-	-	-
Illness	1	42	M	LT Illness	-	-	-	At School
				"	-	-	-	
Keembe Death	2	29	F	Lt Illness	-	-	-	At School
		38	"	"	-	-	-	"
Illness	1	28	M					At School

Table A04

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Lusaka Urban District

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Chibelo Death	2	48	F	TB	1999	Dead	Dead	At school
		45	"	"	1999	-	Dead	"
Chelston Death	3	31	F	LT illness	1997	Dead	Lt illness	At school
		33	"	"	1993	"	Died	"
		31	"	"	2000	"	Alive	"
Illness	1	34	"	ST illness	-	-	Died	Transferred
Olympia Death	3	42	F	TB	2000	-	Dead	At school
		39	"	-	"	-	"	"
		48	"	Lt Illness	"	-	"	"
Illness		45	"	"	-	-	-	"
St Monicas Death	9	45	F	LT Illness	1998	-	-	At school
		39	F	ST Illness	2000	-	-	"
		-	F	LT Illness	1995	-	-	"
		-	M	"	1996	-	-	"
		-	M	"	1997	-	-	"
		-	F	"	1998	-	-	"
		-	F	"	1998	-	-	"
		-	F	"	1996	-	-	Transferred
-	M	"	1993	-	-	"		

Table A05

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Lusaka Urban District

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Lotus Illness Death	2	-	2M	-	-	-	-	At school
	10	32	M	LT illness	-	-	-	"
		48	M	TB	2000	Dead	Dead	"
		53	F	TB	1999	"	-	"
		47	F	LT illness	2000	-	-	"
		-	F	"	1998	-	Dead	"
		-	F	"	-	-	-	"
		-	"	"	-	-	-	"
		-	"	"	1997	-	-	"
		-	"	"	1996	-	-	"
-	M	"	-	-	-	"		
-	"	"	-	-	-	"		
-	"	"	-	-	-	"		
Regiment Death	8	40	M	TB	1996	Dead	Dead	At school
		40	"	"	1996	"	-	"
		49	F	"	1997	-	-	"
		-	"	"	2000	-	-	"
		-	"	"	1997	-	-	"
		-	"	"	1996	-	-	"
		-	"	LT illness	1999	-	-	"
		-	"	"	1994	-	-	"
Woodlands B Illness Death	1	24	F	LT illness	-	Alive	Dead	At school
	7	38	"	"	1994	-	-	"
		34	"	"	1997	-	-	"
		27	"	"	2000	-	-	"
		-	"	ST Illness	1992	-	-	"
		-	"	"	1992	-	-	"
		39	M	Lt illness	1995	-	-	"
-	M	"	1996	-	-	"		
Chawama Illness Death	5	40	M	LT illness	-	-	Died	At School
		-	M	"	2000	-	-	"
		26	F	"	-	-	-	"
	2	35	M	"	-	-	-	"
		35	F	"	-	-	-	"
Kaunda Square Illness	6	-	M	LT Illness	-	-	-	"
		34	"	"	-	-	-	"
		40	"	"	-	-	-	Away from School
		27	F	"	-	-	-	"
		32	"	"	-	-	-	"
		42	"	"	-	-	Dead	"
Death	9	38	F	"	-	-	-	"
		40	"	"	-	Dead	-	"
		30	"	"	1992	-	-	"
		30	"	"	1991	Dead	-	"
		-	"	"	-	-	-	"

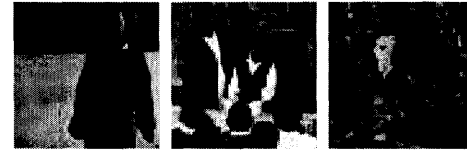


Table A05 contd.

Reported Incidence of Death and Current Illness among Teachers in Selected Schools, Lusaka Urban District

School, Death/Illness	No.	Age	Sex	Cause	"DOD"	Status of spouse & children		Where died/Residing
						Children	Spouse	
Mahatma Death	2	38	"	"	2000	"	-	-
		28	"	"	-	-	-	-
		20	M	ST Illness	-	-	-	-
		-	"	TB	1999	-	-	-
		-	"	LT	2000	-	-	-
		43	M	LT illness	1999	-	Dead	At school
		30	-	"	1999	-	"	"
		40	-	"	2000	-	-	"
		37	M	"	2000	-	-	"
		25	F	"	2000	-	-	"
Illness	7	39	"	ST illness	1997	-	-	"
		40	"	"	1996	-	-	"
		30	"	"	-	-	-	Still at school
		-	"	"	-	-	-	"

Table A06

Reasons for Movements out of Schools, Chongwe and Mumbwa Districts

Reason for Movement out	Chongwe				Mumbwa				Total
	Kasisi	Silverest	Chalimbana	Total	Kalitwe	Shimbizhi	Shibuyunji	Chibuluma	
Normal Transfer/Promotion	2	-	1	3	6	-	8	-	14
Accommodation	-	-	-	-	2	-	12	-	14
Marriage	2	7	-	9	3	2	6	-	11
Deceased	2	9	2	13	-	1	4	2	7
Training	-	-	12	12	1	-	-	-	1
Resigned	2	2	-	2	-	-	-	1	1
Retired	1	1	1	3	-	9	3	-	12
Redirected	5	3	-	8	-	-	2	7	9
Others	6	0	2	8	-	-	3	-	3
Total									

Table A07

Reasons for Movements out of Schools, Chibombo District

	Chibombo			
	Keembe	Mulungushi	Chibombo	Total
Promotion	-	6	4	10
Accommodation	-	-	3	3
Marriage	-	3	1	4
Deceased	2	2	3	7
Training	1	5	1	7
Resigned	-	-	1	1
Retired	1	1	-	2
Redirected	-	-	-	-
Others	-	3	-	3
Total	4			

Table A08**Reasons for Movements out of Schools, Lusaka District**

Lusaka								
	Chawama	Lotus	Regiment	Kaunda Sq.	M. Gandhi	Chelston	St Monicas	Wlands B
Normal Transfer/Promotion	7	169	4	4	-	12	10	3
Accommodation	1	6	13	-	-	-	-	-
Marriage	7	11	4	12	2	7	4	41
Deceased	8	9	8	10	8	3	9	7
Training	-	5	-	-	-	-	-	-
Resigned	3	10	4	2	-	3	1	-
Retired	1	16	-	1	-	7	4	3
Redirected	-	-	-	-	-	-	-	-
Others	3	7	8	-	7	6	4	-

Table A09**Spending per Primary Student (by Province) and per University student 1994-97**

(All expenditures are given in US dollars at the prevailing exchange rate)				
	1994 (Actual)	1995 (Actual)	1996 (Actual)	1997 (Revised Budget)
Central	19.2	26.6	29.0	27.5
Copperbelt	25.6	29.3	29.8	25.1
Eastern	24.0	30.5	30.4	27.0
Luapula	28.1	28.2	26.4	25.2
Lusaka	15.5	27.0	26.2	27.1
Northern	18.3	24.8	27.8	27.0
North Western	23.4	32.0	33.0	28.0
Southern	22.7	30.3	26.9	26.9
Western	25.7	42.1	29.3	33.7
Zambia	22.0	25.0	28.8	27.3
Spending per University Student	3,030	3,482		3,688
Spending per University Student as a Multiple of Spending per Primary Student	138	119		135

Source: BESSIP Preparatory Mission documentation, November 1997

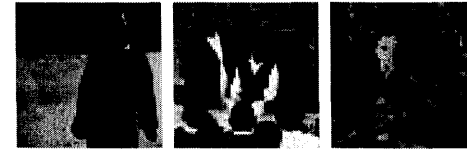


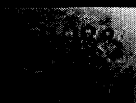
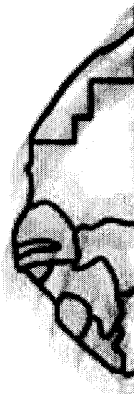
Table A10
Contribution of Death to Staffing Deficiencies by District and Schools

School	Staffing Levels		Deficiency/Surplus		
	Establishment	Actual Staffing	Def.	Death related	
				No.	% Def.
Chibombo					
Keembe	20	10	10	2	20
Chibombo	32	36	4	3	75
Moomba	27	20	7	3	
Mulungushi	25	19	4	2	43
Chisamba	26	20	6	1	50
					17
Mumbwa					
Shibuyunji	35	21	14	5	
Shimbizhi	30	19	11	3	36
Kalilwe	44	53	+7	9	27
Mwembezi	24	20	4	1	126
Kasalu	25	20	5	3	25
Kapyanga	24	16	2	3	60
Chibuluma	15	12	3	3	150
					100
Chongwe					
Kapete	15	10	5	0	-
Silverrest	33	24	9	8	89
Chainda	25	16	9	4	44
Evergreen	15	10	5	2	40
Nangwenya	20	16	6	1	17
Chinyunyu	26	13	13	2	15
Chongwe	36	31	5	8	160
Chitemalesa	15	9	6	1	17
Kasisi	26	22	4	3	75
Bimbe	12	5	7	1	14
Chalimbana	33	13	12	3	25
Lusaka					
Kaunda Square	47	40	7	10	143
Woodlands B	38	28	10	7	70
Lotus	60	52	8	10	125
Regiment	38	41	+3	8	-
Chawama	64	53	11	2	18
Chelston	55	47	8	3	37
St Monicas	50	45	5	9	180
Olympia	70	73	+3	3	-
Mahatma Gandhi	48	51	+3	8	-
Chibelo	54	48	6	2	33
Total					

Table A11

Number of Person Days lost due to Illnesses by District and Schools

District and Schools	No of teachers III	Person days/term	Person days lost to Illness
Chongwe			
Silverest	3	585	42
Chainda	3	195	42
Evergreen	1	65	14
Chinyunyu	1	65	14
Chalimbana	3	195	42
Evergreen	1	65	14
Mumbwa			
Kalilwe	6	1170	84
Shibuyungi	2	130	28
Kasalu	2	130	28
Membezhi	1	65	14
Kapyanga	1	65	14
Shimbizhi	1	65	14
Chibombo			
Mulungushi	1	65	14
Chibombo	1	65	14
Keembe	1	65	14
Lusaka			
Kaunda Square	6	1170	84
Lotus	2	130	24
St Monicas	3	195	42
Mahatma	2	130	28
Lusaka Girls	1	65	14
Woodlands B	1	65	14
Chawama	5	325	70
Chelston	1	65	14
Olympia Park	1	65	14



Gestetner Building, 138 Palala Road, Menlo Park
PO Box 6541, Pretoria, 0001, South Africa
Tel: +27 12 369 9922, Fax: +27 12 348 7688
www.hivdev.org