CAN INDUSTRIAL RELATIONS COPE? THE IMPACT OF, AND RESPONSE TO HIV/AIDS IN BOTSWANA ENTERPRISES: INSIGHTS FROM FOUR CASE STUDIES DURING 2001

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1 Introduction

Background

Botswana is a large but sparsely populated country, with total population estimated at 1.64 million in 1999. It is experiencing one of the most severe HIV/AIDS epidemics in sub-Saharan Africa, the region which has the world's worst HIV/AIDS epidemic (UNDP, 2000a: 7). Table1shows the increase in HIV prevalence rates recorded amongst pregnant women attending the sentinel Anti-Natal Clinic sites between 1992 and 1999[1].

As of August 2000, the best estimate of society-wide HIV infection in Botswana is between 15-17%, expected to rise to 18-21.5% in the absence of effective intervention to reduce transmission by 2005. Infection rates among adults aged 15-59 are substantially higher than this average, estimated at around 28-30% (240'000 adults), expected to rise to 31-35.5% within 5 years without behaviour change. Based on a survey of the most sophisticated epidemiological modelling available at present, it is estimated that if rates of sexual partner change, condom usage and effective treatment of sexually transmitted diseases all improve by 15% over the next five years, adult HIV prevalence will be reduced from 37.5% to 32% in the year 2010, implying a reduction in the number of adult infections of around 40'000 – "*a massive reduction in suffering and social impact*" (UNDP 2000b: 37). Areas and regions in the country differ as to where they are on the epidemic curve. For example, Francistown is expected to increase its current number of AIDS cases by 50% and then stabilise after 2005, whereas areas such as Kwaneng East are expected to more than double their current number of AIDS cases before stabilising towards the end of the decade.

Currently, there are over 15'000 AIDS deaths per year in Botswana, and by 2010 (at current infection rates) over 30'000 deaths per year are expected. If mother-to-child transmission rates are reduced by Government medical intervention by 50% as expected, this will reduce the total AIDS deaths by about 6% in 2010. Between 1.2% and 1.3% of all adults were projected to die of AIDS in 1999, and this is expected to increase to between 3% and 3.5% of all adults *per year* by 2010, at 1999 rates of infection.

If this death rate from AIDS were evenly distributed amongst all working adults, every enterprise could expect this percentage of their workforce to die every year. Of course, with certain sectors and occupations experiencing much higher risk profiles than others, the distribution of deaths will be uneven. Most deaths are expected to occur in the 25-40 year age-groups, with women dying at earlier ages due to their earlier age of infection than men in Botswana, although the average survival time for women after infection is estimated to be longer than that for all people older than 40.

At current infection rates, only in the best case scenario will population growth continue to be positive in Botswana until 2010, and even in this case it will have dropped to 0.2% per annum – and this does not include the effects of reduced fertility of women due to HIV infection. By 2010, at current levels of infection, the number of adults aged 35-45 is projected to be around 50%-60% lower than the number with a no-AIDS scenario – with obvious impact on locally available skills for enterprise growth. The number of children aged 0-9 years is projected to be 32%-40% lower than in a no-AIDS scenario. Current predictions show that average life-expectancy for women will fall by 50% over the next decade, while combined life expectancy for men and women is projected as being between 46% and 52% of no-AIDS scenario life expectancies in the year 2010, due to

[1] When taken as societal averages, these rates have an urban bias, since the majority of the ante-natal clinics are in urban areas – however, rural women are also using these clinics. Rural prevalence is 80% of urban prevalence. The bias towards younger, more sexually active women (average age of pregnant women is lower than all women) is offset by the reduced fertility of HIV positive women compared to HIV-negative women, which reduces the numbers appearing at the ante-natal clinics.

adult mortality and lower fertility of HIV-positive women. There will be between 12000 and 24000 fewer births than in a no-AIDS scenario in 2010, while the number of children under 15 who have lost their mothers to AIDS will have risen to 159'000-214'000 by 2010. Dependency ratios (ratio of people aged below 15 and over 64 to adults aged 15-64) may decrease slightly, due to the impact on fertility and the movement of a large group of 5-15 year old orphans into the technically non-dependent age-groups over the next decade.

Table 1: Ante-Natal Clinic HIV prevalence rates (%) in all Botswana surveillance sites

(Interpolations in red, extrapolations in blue; * indicates sites situated on the main North South highway in Botswana).

Site	1992	1993	1994	1995	1996	1997	1998	1999
Chobe	8.5	18.3	28.1	37.9	38.4	38.8	44.8	50.8
S. Phikwe*	21.5	24.3	27.0	30.1	33.1	41.5	49.9	50.0
Francistown	23.7	34.2	29.7	39.6	43.1	42.9	43.0	43.0
Serowe/Palapye*	14.9	19.9	24.9	29.9	32.2	34.4	38.1	41.8
Tutume*	16.2	19.7	23.1	26.6	30.0	33.8	37.5	41.3
Gaborone	14.9	19.2	27.8	28.7	31.4	34.0	39.1	39.1
Kweneng E.	11.1	13.7	16.3	18.9	25.0	31.1	37.2	37.2
Maun	12.7	16.1	19.4	26.3	33.1	33.3	33.5	33.7
Mahalapye*	12.1	16.2	20.3	24.3	26.2	28.0	30.0	32.0
Lobatse*	7.8	17.8	27.9	37.9	35.8	33.7	32.5	31.3
Kgatleng*	13.6	17.5	25.3	26.2	28.6	31.0	30.3	29.5
Kweneng W.	11.1	13.7	16.3	18.9	21.4	24.0	26.5	29.0
Southern	10.2	13.1	16.0	18.9	21.8	23.3	24.7	26.2
Ghanzi	4.8	9.5	14.2	18.9	20.0	21.2	22.3	23.4
Total	13.2	18.2	22.8	27.6	30.3	32.5	35.3	36.6

Source: UNDP: Socio-economic impact of HIV/AIDS in Botswana; review and evaluation of HIV/AIDS related data for an expanded national response to the HIV/AIDS epidemic in Botswana. (UNDP 2000b: 35)

These dire predictions are based on current infection rates. In the likely absence of a cure or vaccine for HIV/AIDS being either developed or affordable to Botswana in the next decade, prevention of infection continues to be the only way to ensure that these scenarios are moderated. Botswana has the best chance in Southern Africa of improving its infection rates for HIV, due to the existence of: (Lindsay et al: WHO 2000: 8)

- a publicly funded education system with adult literacy estimated at 70%
- a publicly funded and relatively accessible, mainly free to users health service (30 hospitals and 500 primary health care clinics and health centres)
- sustained high levels of GNP growth since independence in 1966
- strong commitment at the highest political level to dealing with HIV/AIDS (Financial Mail 2001; 34).

On the down side, poverty is still endemic in Botswana, since GDP growth has not resulted in equitable distribution of income. 47% of the population lives in poverty (62% in rural areas, 38% in urban areas), and there is a very high incidence of female-headed households (47%) – the majority of them living in poverty (Lindsay et al: WHO 2000: 9). Furthermore, changes in sexual behaviour are slow despite the terrible and inexorable rise of HIV infection rates in Botswana during the 1990's. For example, in a study of Botswana university students (Jack et al, 1999), 85% of the students reported that they understood the methods of HIV transmission, its consequences and how to prevent infection, but 32% of students used condoms only occasionally or not at all, while 45% continued to engage in multiple-partner relationships. Knowledge alone is thus not enough to change sexual behaviour, unless the underlying social and economic realities which influence its use are laid bare and addressed.

Project objectives

The project "Talking to Botswana Companies" was conducted by a joint research team consisting of three researchers from Botswana National Productivity Centre (BNPC) in Gaborone and three researchers from Fafo (from the Johannesburg and Oslo offices). The project arose out of a previous research collaboration between Fafo and BNPC ("Phetogo 2000"), which investigated barriers to productivity in a number of enterprises in different sectors in Botswana. In the report of that project, HIV/AIDS was identified as a potential barrier to productivity in enterprises, and as an unpredictable factor in enterprise growth and development, but it remained a residual and un-investigated factor at that stage. This new project was designed as a limited pilot project to develop an understanding of the dynamics of the impact of HIV on enterprise productivity using concepts of productivity elaborated and studied in Phetogo 2000. The main purpose has been to develop the understanding of the impact of HIV/AIDS on enterprise level and how action should be taken.

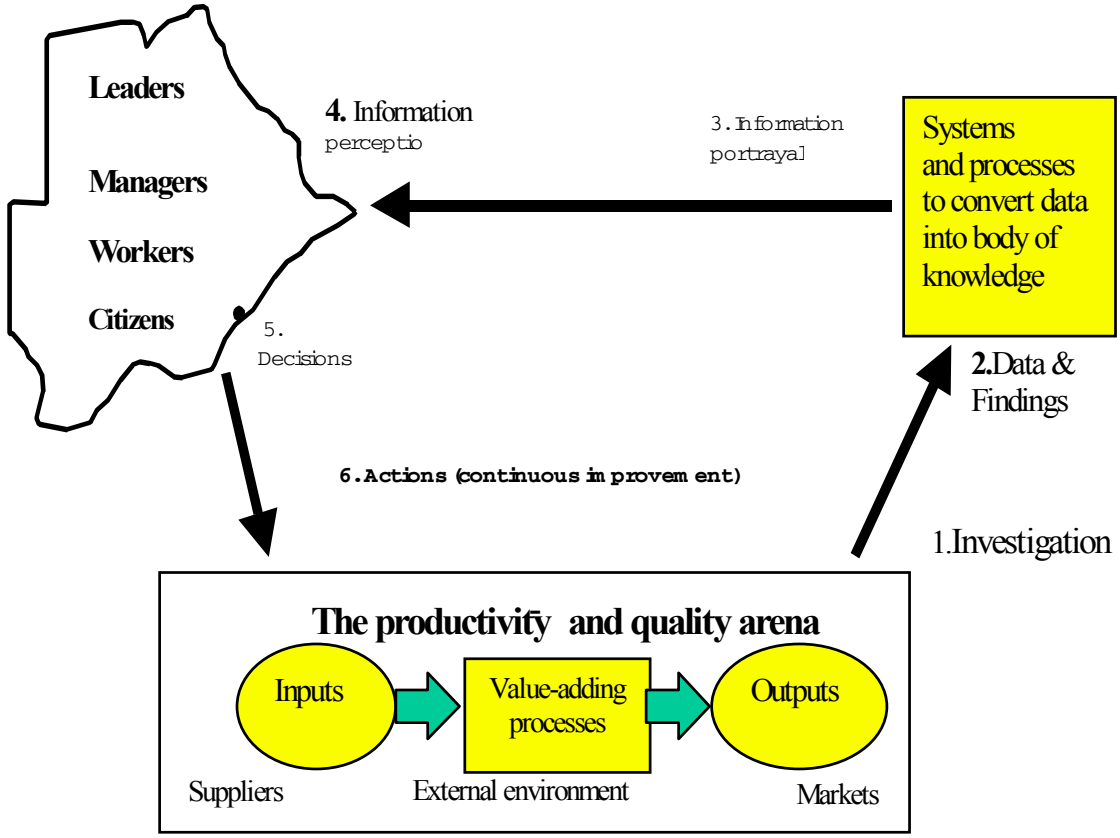
The project has aimed to;

- identify existing research and data, both from academic literature, and practical experience
- create a conceptual model for the impact of HIV/AIDS on enterprise-level productivity, and for the enterprise's response
- validate this model against four enterprises in Botswana
- develop input to training courses to be given by BNPC on HIV/AIDS and productivity

Conceptual framework and methodology

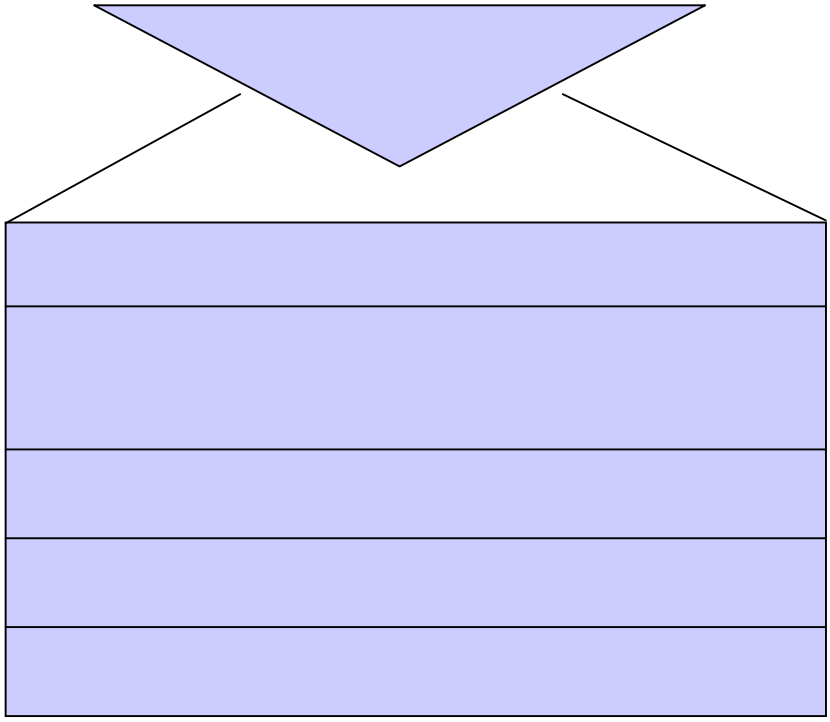
In the Phetogo-2000 research by Fafo/BNPC (Botswana National Productivity Centre and Fafo: 2001), productivity is seen as the result of a knowledge loop in which understanding and knowledge about the "input; value adding; output" processes in an enterprise are continuously improved through knowledge assessment and communication between the various stakeholders in the enterprise (figure1). Knowledge obtained in value adding processes is re-applied in them in an iterative way.

Figure1 Phetogo-2000 concept of productivity



Productivity is a key determinant of a countries long term standard of living. Increases in productivity provide the means for sustainable economic growth and hence increases in standards of living and quality of life. At the national level, productivity or overall economic efficiency can be measured using Total Factor Productivity (TFP). TFP captures the effects of qualitative improvements that allow output to increase at a greater rate than increases in related inputs. It reflects the efficiency and effectiveness with which all factors of production – labour and capital and intermediate inputs – are jointly used to produce outputs.

Figure 2: Sources of Total Factor Productivity growth

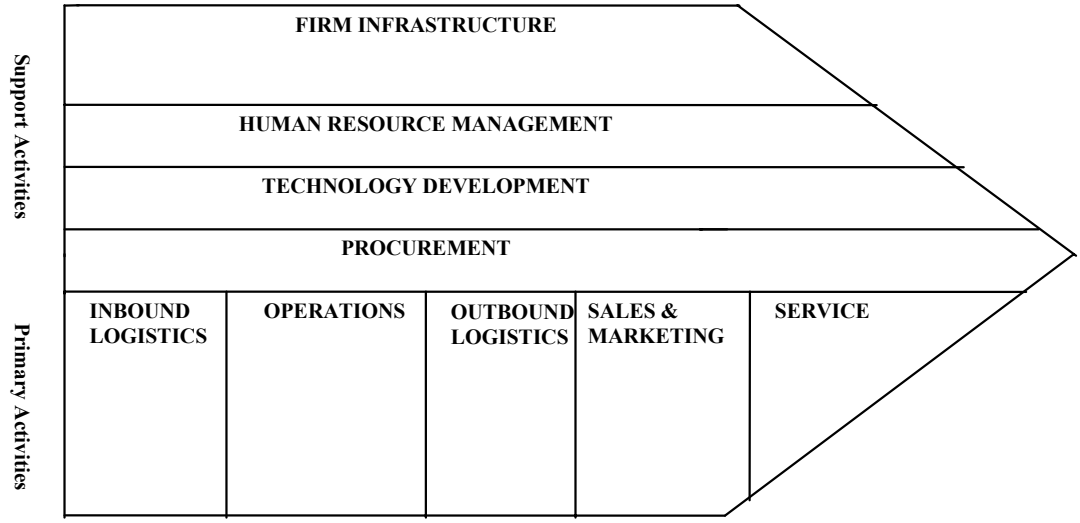


Source: Productivity Concepts and their Applications: Productivity and Standards Board of Singapore.

Investments in human capital, which may take the form of education and training, are contributors to TFP. These investments result in improvements in the quality of the workforce that is available for productive value adding activities. Workforce quality is also determined by the physical and mental health condition of labour and motivational and attitudinal elements. Issues relating to the quality of the workforce have been reported to be significant determinants of productivity improvement in Botswana. In this regard HIV/AIDS is considered to be a potential barrier to productivity improvement as it likely to have a profound effect on the human resources available to enterprises.

To be useful, research at the enterprise level should aim to locate the effects of changes in workforce quality due to HIV/AIDS within the business milieu of the organization under study. Such an investigation would need to embrace the scope of organisational activities, structures, processes and linkages that make up the enterprise. In this study attempts are made to determine the effects of HIV/AIDS at enterprise level by moving from the macro level TFP assumptions to a more micro level impact assessment. The conceptual framework of the *value chain* was used to analyse enterprises.

Figure 3. Porter enterprise value chain model used in Phetogo-2000 enterprise productivity study.



Unlike traditional methods of analysing strategy and business performance, the value chain approach takes a broader and more holistic approach to organisational functioning. It provides a systematic methodology of examining all the activities a firm performs, how they relate and interact to produce a result. The result can be described as the difference between the total value produced and the collective cost of performing all the activities required to produce it. The value chain approach disaggregates the firm into its strategically relevant activities in order to understand key aspects of its performance. Therefore, according to the framework a firm is a collection of activities that are performed to design, produce, market and support its product. Value activities are the physically and technologically distinct activities a firm performs.

The fieldwork on which this report is based was undertaken during April 2001, in and around Gabrone. The research team investigated the impact of HIV/AIDS on four enterprises in the service sector in Botswana. The research is qualitative rather than quantitative, and is in no way representative of the sectors from which the companies were drawn, or the economy as a whole. Nevertheless, findings in the four companies can be tested in broader surveys of enterprises. Although efforts were made at each of the four companies to gain access to numerical data which would support assertions and perceptions captured in interviews, almost no such data was eventually forthcoming; indeed the enterprises did not seem to possess such data.

The four companies are a convenience sample, biased in the sense that they were the only companies responding positively to the request for assistance out of a list of around 15 enterprises that were approached because of previous involvement in the BNPC Phetogo 2000 project. As such, they were all companies that had given attention to the question of productivity in the past, or had an interest in the issue of HIV/AIDS and its impacts. For example, the chief executive officer (CEO) of one of the companies (Media3) said that he saw agreeing to participate in the research as a way of stimulating interest and commitment amongst the staff towards tackling the HIV/AIDS issue in the company in a new way.

The four companies are referred to in this report as Transport1, Transport2, Media3, and Tourism4. Their primary services or products being long distance road freight haulage (Transport1); long distance freight and passenger (coach) transport (Transport2); a newspaper (Media3); and a hotel/casino complex (Tourism4). As such, they are all companies in the services rather than manufacturing or primary extractive sectors. The companies range in size from around 440

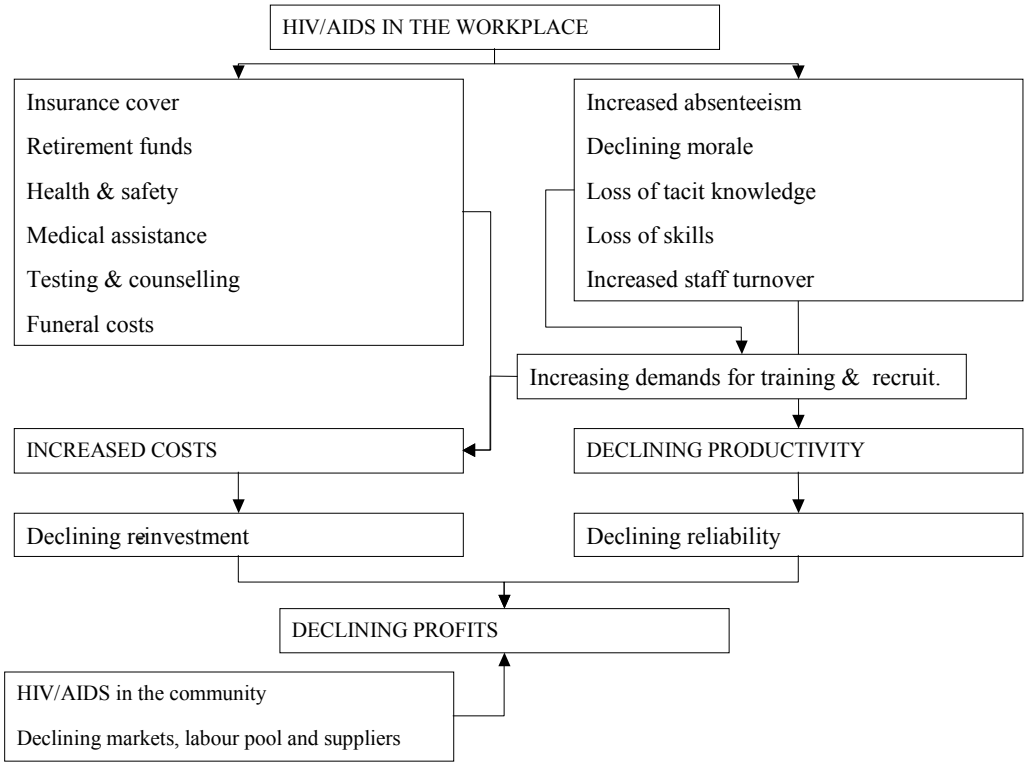
employees (Tourism4) to 200 employees (Transport1), to 45 (Media3). Two of the companies were owned by companies from the Republic of South Africa (Transport1 and Tourism4), while the other two are Botswana national enterprises – one of them a public company owned by a consortium dominated by the NGO/trade union sector, and the other an unlisted private company. This variety of company structures, size, markets, and foreign/local ownership allowed us to compare the impact of HIV/AIDS in companies with quite different workforce requirements. The research team proceeded by "brainstorming" a number of hypotheses about the possible impacts of HIV/AIDS on Botswana enterprises, and then developing a basic questionnaire format for the interviews that were to be conducted at various levels of staff in each company. The questions could be adapted or modules added or subtracted depending on the role or function of the person or persons being interviewed in each company. Appendix 1 lists the hypotheses and the questions, which were designed to test them. The interview design was informed by the literature search summarised above, and the basic model of the impact of HIV/AIDS used by the ILO in its work on AIDS and employment (figure3).

Finally, "*cases within cases*" were identified where possible, if interviewees mentioned occurrences or events in the company that could be further investigated to throw light on aspects of the possible impacts of HIV/AIDS. Information from these "cases within cases" is given in box inserts in the text below.

Content of the report

The report proceeds with an account of the results of the 4 case studies in turn, assessing the vulnerability and susceptibility of these companies to HIV/AIDS, and the impact of the pandemic upon productivity in their value chains, and according to the ILO model of impacts (figure 3). The next chapter summarises and compares these results between the companies, and draws conclusions for these enterprises, making recommendations as to how they could approach the question of HIV/AIDS from this point onwards. Finally, the report makes some recommendations for the Botswana National Productivity Institute to consider regarding its role in the field of productivity promotion and enhancement.

Figure 4: ILO model of HIV/AIDS impact on companies.



2 The economic impact of HIV/AIDS

HIV/AIDS is no longer considered solely as a health problem. It has become a matter of economic development as it strikes the most economically productive members of society (Quinn et al. 1986), who also contribute the bulk of tax. According to the International Labour Organisation (ILO 2000) three out of four people living with HIV are workers; the FAO estimates that deaths caused by HIV/AIDS in the 10 most-affected African countries will reduce the labour force by as much as 26% by 2020 (FAO 2001). In Botswana, it is estimated that one quarter of the households can expect to lose an income earner within the ten next years (Greener 2000).

Twenty years after the first case of death from AIDS was diagnosed, many argue that the epidemic remains a rather new phenomenon to explain that its effects have not been comprehensively reviewed yet. In particular, there are many simplistic conclusions, and hazardous speculations about the economic impact of AIDS. Against the apocalyptic scenarios that have been envisaged demographers have shown that population growth continues despite the health disaster (UN/WHO 1991). They have also shown that comparisons such as AIDS in Africa and the 14th century European bubonic plague do not make sense, because the current epidemic takes longer to kill and therefore implies more costs of caring. In the same way, staggering numbers and estimates, such as the impact for Botswana companies expected to increase sevenfold during the next seven to eight years (Botswana National Task Force 1997), should be considered cautiously. The extreme assumptions contained in the models giving the most negative results may not be the most realistic (Over 1992).

This section reviews the existing information on the multi-dimensional economic impact of HIV/AIDS. We will refer mainly to the southern African countries where the disease has caused far and away the greatest human and economic devastation, and where most of the empirical work has been done. Special attention will be given to literature on Botswana. We first examine what kind of data is available; second we review the analyses of the impact at various levels. Third, we look at the assumed limits in understanding and measuring the impact.

What kind of information exists?

A few papers reviewing the literature on socio-economic impact of HIV/AIDS must first be mentioned. The first is from Foster and Lucas (1991) and the most recent one is Loewenson and Whiteside (1997); the latter contains a list of AIDS-related research programmes from the Southern African Development Community (SADC) countries. The issue of the economic impact of HIV/AIDS emerged in the late 1980s when

African companies recorded high rates of morbidity and mortality of their staff (Aventin and Huard 2000), and when attention was drawn to the issue of discrimination against people living with AIDS in the world of work (ILO 2000a). However, information at the company level is rather limited compared to household and macroeconomic levels. The sources of information and the kind of data they contain are the following:

- A major source of HIV data is surveillance; the most common being that of antenatal clinic attendees that can be used to estimate the level of prevalence of HIV. Such data are extremely variable in terms of coverage, consistency and comparability as shown by Loewenson and Whiteside (1997) for Southern Africa countries.
- Demographic models produce estimates of the progression of HIV/AIDS, the expected number of infected people, deaths and the likely repercussions on population growth, life expectancy, and the family structure (UN 1997). Models such as the Metropolitan-Doyle Model are used for sub-groups as well as general population; and it is said to be able to consider various interventions into the epidemic for example behavioural responses such as condom usage, reduced number of partners, etc. (Dorrington; 2001).
- Household surveys, the most common being amongst rural farming smallholders, include measures of change in income, working time, work force, productivity, output, and output diversity. Such studies may include individual level data; but more often the changed household income and dependency ratios have been given specific attention (WB 1997, Greener 2000). Household surveys also explore the differences in impact between communities where there are active support services and other communities with less active services (Kongsin and Watts 2000). Surveys depict the downward spiral beginning when the first adult in a household falls ill and the household begins to seek support from relatives, then borrows money and finally sells productive assets (Bollinger and Stover 1999). There are only a few household follow-up studies addressing the effectiveness of coping strategies at the household level (World Bank 1999).
- Macro-economic models attempt to capture how great the future impact of HIV is likely to be in terms of labour supply, productivity, capital accumulation, GDP and GDP per capita. D. Cohen (1999) who reviewed macroeconomic models has distinguished three alternative approaches:

The first intends to predict what would have been the performance of the main economic aggregates for a country over a period in the absence of HIV. Then, it is estimated how economic performance would be changed by superimposing particular assumptions with respect to the level of HIV on the base run of the model. The main study is from Cuddington (1991) who used conjectures about the demographic effects of AIDS and developed a growth model based on that of Solow to estimate the macroeconomic effects of AIDS on the Tanzanian economy. A similar model that contains projections for ten scenarios was constructed for Botswana (UNDP 2000a).

The second approach assumes that the effects of HIV come through a reduction of labour supply; the model is run with varying proportions of skilled/unskilled and urban/rural workers in the labour supply. Kambou and al (1991) have applied this modelling process to Cameroon.

The third approach assumes that the national economic costs of HIV can be split into direct costs (mainly health costs) and indirect costs (the output foregone by a country due to AIDS mortality). This approach was applied to Thailand by Viravaidya and al. (1993).

- There are a few sectoral studies that address the implications of the epidemic (e.g. increased users charges) for the general performance of economy. Loewenson and Whiteside (1997) argue that *sectors* as they have been defined are too broad (e.g. agriculture including smallholders as well as industrial-type farms) for useful analysis. Global studies include partial sector-level analysis (e.g. health and education sector). In general, very little has been done about the *actual* impact of HIV/AIDS as opposed to the *probable* impact (Cohen 1999).
- The insurance industry provides information on the proportion of employee deaths attributable to AIDS, and has carried out actuarial assessments to determine the viability of private health insurance schemes given the demographic impact of AIDS.
- Private companies generate very little information of their own with regards to HIV/AIDS (UNDP 2000b). Indeed, most of the work on the impact at the company level has been done by the companies themselves, but few of the studies are in the public domain (Loewenson and Whiteside 1997).
- Firm surveys usually give information on the rates of infection among workers at different skill levels, the number of deaths, and related cost figures (UNAIDS 2000a). Surveys distinguish between direct costs (e.g. absenteeism, medical costs) and indirect costs (the foregone production, loss of skills) to give the contribution of different elements to the overall HIV/AIDS-related costs. It is a widely accepted fact that "the relationship between HIV/AIDS and the costs and revenues of employers has rarely been examined systematically" (ILO 2000). In addition, firm surveys are usually limited to larger companies and formal enterprises (Kramer; Aventin and al. 2000). Firms that are surveyed may not be nationally representative and may have been selected for their prior interest in mitigating the impact of AIDS, such as in the case of Botswana (Botswana National Task Force on AIDS 1997).
- Another source of information is specific theme studies such as AIDS and the change in government resource allocation (WB 1997), the income distribution change (Greener 2000), and the impact of the epidemic on the world of work and social security systems (ILO 2000). The gender issues have also been strongly raised (UNDP 2000). However, it is acknowledged that little information is available on the specific impact on work time, entitlements, and economic security.

- The programmes aimed at coping with the epidemic provide economic analysis of prevention activities, such as budgeting action ("how much money buys how much prevention or care?"). Most of the available information comes from a small number of carefully implemented and evaluated projects such as the survey of South-African companies (HEARD 1998). The UNDP has developed an HIV Impact Assessment (HIA) that is aimed at taking into account the potential impact that a given development project might have on the spread of HIV (1998). The HIA provides a framework for assessing the potential costs related to HIV/AIDS prior to implementation of development projects. The HIA takes into account non-quantifiable individual psychological-level costs such as poor self-esteem, suicidal tendencies, loneliness, feelings of rejection and guilt. The HIA also utilises non-quantifiable information at both household level (family dissolution, budgeting problems, discrimination among members, increase of child labour) and community level (deteriorating infrastructure, increase in the number of street children, breakdown of social support system).
- Last, awareness-raising programmes undertaken by workers' organisations, non-governmental and community-based organisations provide information on the relation between low salaries, bad working conditions and HIV infection. The ILO document *HIV/AIDS: a Threat to Decent Work* (2000) reviews such programmes and activities.

What is said on the impact of HIV/AIDS?

Although it is difficult to project, there is evidence that the economic impact of HIV/AIDS is cumulative: AIDS-related spending leads to lower investment, for families as well as for companies and governments; increased turnover disrupts on-job training as well as organisational routine handing on (Auventin et Huard 2000). In countries where the pandemic has reached the maturity stage (AIDSCAP 1999), the impact is systemic: HIV/AIDS does not affect sub-sector components or certain areas only, but affects all sectors and regions.

Household level impact

- The high cost to households from AIDS will usually be due to the large number of deaths caused by the epidemic rather than by the fact that they are caused by AIDS (WB 1997). Household spending studies show that the direct impact of an AIDS death will not be much different from that of a non-AIDS death, despite higher medical expenditures for AIDS.
- Surveys have shown that in hard-hit countries when a breadwinner dies from HIV/AIDS, the household income falls by 50% to 80% (FAO/ONUSIDA). In Ethiopia, a study found that AIDS-afflicted households spent 50-66 percent less time on agriculture than households that were not afflicted; a similar study on Tanzania found that women spent 60 percent less time on agricultural activities when their husbands were ill (FAO 2001).
- It is not only the volume but also the variety of households' productions that may be reduced: households have to trade off some crops against others, and livestock may be used for care and funeral expenses. Furthermore, above the loss of productive labour, it is the "value-chain" that is disrupted with delays or poor timing of farming operations, lack of resources to purchase inputs, abandonment of soil conservation measures, and breakdowns in extension services as staff is ill.
- Resources that are usually used to cover necessities and to invest in children's futures are depleted. Orphans who must contend with the loss of the most productive members of the family suffer disadvantages in term of food and school attendance; a study on urban dwellers in Cote d'Ivoire showed families with a member sick from AIDS cut spending on their children's education in half and reduced food consumption by about 40% as they struggle to cover health expenditures that soared four times their usual level (quoted in UNAIDS 2000).

- Ultimately, the downward spiral leads households to de-capitalise, as shown by a study in Uganda which found that 65% of the AIDS-affected households were obliged to sell property to pay for care (FAO 2001).
- Against early assessments of the household impact, survey data suggest that when it comes to coping with the economic impact, households in general are surprisingly resilient (WB 1997). On the other hand, it appears that coping strategies succeed in limiting the short-term impact of an adult death only at the expense of serious longer-term consequences (WB 1999).

Community and area level impact

- Community surveys have identified nomadic pastoralists and wives of seasonal migrant workers as categories with the highest susceptibility to HIV infection. In industry and services, studies have found the highest prevalence rates in the mining sector with large concentrations of men separated from their families, which provides a ready market for the services of commercial sex workers (Safaids 1999).[2]
- It is not clear to what extent the coping patterns such as the extended family taking care of orphans and of those left behind through cash and in-kind transfers can continue given the increased number of AIDS orphans (Bollinger and Stover 1999, UNDP 2000). Studies showed that orphans do not eat as well as other children and are not given the same opportunity to go to school (Wehrwein 2000), irrespective of whether they are cared for by relatives or not. There is evidence that safety nets are threatened by social change such as urbanisation and migration of labour. Consequently, the costs of the epidemic may ultimately rest more and more with individual families (Godwin 1997).
- Globally, the most seriously hit areas and communities have shown an agricultural labour force decrease ranging from 2,9 to 1,8 per cent in the year 2000. Rural areas crossed by trucks and those with migrants to urban areas are the most vulnerable (AIDSCAP 1999). Although the more "traditional subsistence" areas are less exposed, seasonal migration could make them vulnerable as well.

Impact on companies

There is a general consensus in the literature that HIV/ AIDS has so far not significantly increased costs for companies, although HIV/AIDS is expected to increase companies' labour costs as the increased morbidity and mortality rates of workers induce lost labour time and productivity. It will take time for the impact of AIDS to be felt. According to the World Bank, *until more definitive studies are performed, the evidence suggests that the impact of AIDS sickness and deaths is not a major determinant of the economic performance of the average firm in developing countries* (1997). The World Bank even notes that the impact of the deaths on firm profits has never been estimated.

- Firm surveys show an increase in AIDS mortality, though the incidence is somewhat sporadic (Loewenson and Whiteside 1997); in a study of five Botswana companies, Greener (1997) found that one out of three employee's death was caused by AIDS. All categories of workers are affected; indeed wealth, status and mobility are clearly risk factors (ILO 2000a) for HIV/AIDS.
- Several surveys of Sub-Saharan Africa companies show that the most significant element of the cost of HIV/AIDS is absenteeism (Loewenson and Whiteside 1997, ILO 2000a). However, the lost time due to sickness calculated as the number of AIDS-related sick leave days is not large: Greener (1997) found that 8 % of illness absence was AIDS-related.

[2] On the other hand, it is in this sector that the most comprehensive programmes aimed at coping with AIDS have been developed; but there are as yet no measures of the effects of such programmes.

- In general, sickness-related expenses are higher for the companies than death-related expenses. Expenses depend of course on the participation of the employer; in schemes where the employer is fully responsible for increases in welfare benefit costs, it is projected that HIV/AIDS could add around 15 % of the remuneration budget of a South-African typical manufacturing company by 2005 and 30 % by 2010. Greener (1997) found that 8 % of the medical costs are assumed to be attributable to AIDS; different sources mention some companies that reported a doubling of medical expenses over a five-year period (ILO 2000).
- Roberts and Brau (1997) found that prevention programmes costs are only a fraction of the costs of AIDS to large companies such as Botswana Diamond Valuing and Botswana Meat Commission; there is no available information for smaller firms.
- Aventin and Huard (2000) have calculated in three manufacturing companies in Côte d'Ivoire that the cost of the epidemic varies from 6,8 % to 10 % of the total wage bill for a 10 % staff HIV-prevalence rate. The figure from a five companies study in Botswana is much lower: 0,7 % for a 23 % staff HIV-prevalence rate (Greener 1997).
- Thus, a major finding is that the impact of the higher rates of sickness and death is not large in relation to overall firm attrition (World Bank 1997).[3] Furthermore, the time to replace deceased workers that varies from an average of two weeks for unskilled workers to only three weeks for skilled workers doesn't significantly raise costs. The only hint in the labour force of AIDS-related increased costs is that companies take longer to replace deceased professionals (24 weeks). (World Bank,1997).
- Reports have been made of breakdowns in production, poor planning, failure to meet delivery targets and reduced output quality due to losses in skills and experience in the labour force (Loewenson and Whiteside 1997). However, no effect on productivity could be measured; 78 % of surveyed firms in Zambia felt that labour productivity had not been affected and that lower output was not attributable to AIDS (ILO 1995).
- Last, some argue that HIV/AIDS can have also positive effect for companies as there may be an incentive to eliminate some HIV-related costs by replacing human beings – especially those without special skills – with equipment and machinery (UNAIDS 2000a); but such incentives and strategies are not documented enough to assess this effect.

National level impact

It is argued that the HIV epidemic in sub-Saharan Africa has not in fact made a dent on standard macroeconomic yardsticks such as GDP for most of the 1990 decade, whereas UNDP (2001) assumes that HIV/AIDS may shrink GDP by 40 per cent in some countries. The *impact* is consensually defined as the difference between the trend growth rates with and without AIDS, but some authors claim that standard economic statistics such as GDP and GDP per capita are the wrong way to measure the impact of the epidemic that should be seen in the larger context of human welfare such as the losses of years of life expectancy, of investments in human capital, and the losses of lives (WB 1997).

- Amongst the first modeling attempts, Cuddington's (1991) suggested that, without decisive policy action, AIDS could reduce Tanzanian GDP in the year 2010 by 15 to 25 percent in relation to a counterfactual no-AIDS scenario, and that per capita income level would fall by 0 to 10 percent by 2010. More recently, the similar model constructed for the Botswana economy indicates that HIV/AIDS will have reduced the GDP by 31 % in 2021 under the

[3] A 992 African manufacturing firms survey showed that the average attrition rate from all causes is from 8 to 30 times larger than that from sickness and death (WB 1997).

most likely scenario for the epidemic curve there (UNDP 2000a). The Government of Botswana (2000) has measured an 8 % fall in national household-level per capita income due to AIDS.

- Several calculations are available for Africa. According to Over (1992), the net impact of the epidemic on per capita GDP growth is negative at 0,15 percentage points for the average Sub-Saharan African country under the most plausible scenario (that 50 % of the treatment costs be financed out of savings and that each education class has double the risk of the one above it). It increases to a third of a percentage point for the ten most advanced epidemics.
- The World Bank (1997) has calculated that HIV/AIDS has reduced the annual rate of Africa's per capita GDP growth by 0,7 %; however, the Bank estimates that declines in population growth caused by AIDS would tend to offset any decline in economic growth. Elgsås statement on Botswana (1999) is similar, arguing that the GDP per capita could increase and unemployment could decrease.
- Interestingly, case studies on South and South East Asia countries give a rather different picture: Bloom and Mahal (1997) surmise that while AIDS may be particularly costly on a per capita basis, there is little evidence to substantiate the claim that the epidemic is costly at a national level.
- Analyzing the distribution of different AIDS-related costs, Viravaidya and al. (1993) have shown how much more significant are the indirect costs (lost output due to AIDS mortality) than the direct ones. Using an economy wide computable general equilibrium model, Arndt and Lewis (2000) show that the largest share (nearly half) of the deterioration in growth in South Africa is attributable to the shift in government current spending towards health expenses, which increases the budget deficit and reduces total investment; an additional third stems from slower growth in total factor productivity.
- The shock for the health sector and government spending, and the consequent neglect of other productive investment are documented in several studies (WB 1997, UNDP 2000a, FAO 2001). A study on South Africa showed that 50% of the beds in a large provincial hospital are occupied by people with AIDS (Whiteside 1995); the figure is the same in Zimbabwe (UNAIDS 2000a). AIDS could account for between 30% and 60 % of public-health expenditure by 2005 according to FAO (2001); in Botswana, spending on health is likely to triple over the next ten years (UNAIDS 2000a). In Zambia, with the lost teachers due to AIDS, the systemic impact is even more obvious as training of primary school teachers had to be reduced from 2 years to 1 year to be able to cope with the loss of teachers (FAO 2001). The capabilities of the future labour force are jeopardized by such a reduction.
- Among studies on the impact at the national level, the link between HIV/AIDS and poverty is central. The relationship is indeed a two-way relationship (Cohen 1999, Godwin 1997). The epidemic increases the extent and the depth of poverty (WB 1997) as the feminization of poverty and increased child labour reveal (ILO). And poverty and inequality appear to simulate the spread of HIV (WB 1997): the probability to be infected is higher for the poorest who are often the less educated and less informed about HIV. Wars also increase the spread of the epidemic (PBS 12/6/2000).
- Loewenson and Whiteside (1997) argue for the likelihood that macroeconomic Structural Adjustment Programmes have therefore contributed both to a worsened HIV epidemic and a reduced capacity to manage its impact; the authors note that Structural Adjustment Programmes (SAPs) in Southern Africa have been associated with negative development indicators (increased infant mortality, poorer childhood malnutrition, a worsened situation for women) which, in turn, increase HIV transmission.

The limits of knowledge on the economic impact of HIV/AIDS

Research has faced many difficulties in calculating the economic costs of HIV/AIDS due to insufficient information, the difficulty of distinguishing between AIDS-related factors and other factors affecting economic performance, and uncertain methodology.

Some crucial data are lacking or incomplete

- It must first be said that many countries lack basic data on the distribution of HIV infection and AIDS. Loewenson and Whiteside (1997) argue that reported AIDS cases data are probably more a reflection of the coverage of the health sector and attitudes of health professionals towards reporting than the real incidence of AIDS. Health records that provide data such as the number of sick-leave days are also rather uneven.
- There is no comprehensive follow-up of demographic indicators as statistics bodies remain undeveloped in Africa (CEPED 1995); data such as baseline mortality may be very controversial, thus leading to significant differences when assessing the impact of HIV.
- As many people are not willing to disclose their status (if they know themselves), only registered employees are taken into account; this leads to underestimation of the costs (Aventin et Huard 2000). The AIDS cases reporting rate is estimated to range between 8 % and 30 % of cases (Loewenson and Whiteside 1997).
- There are concerns about the validity of the surveillance data, particularly about whether the antenatal HIV prevalence data can be relied upon as a measure of prevalence in the adult population as a whole (UNDP 2000b).
- Econometric modeling does not have good track record (Cohen 1999), and projections are usually accepted only if they are consistent with outcomes of qualitative assessments (UNDP 2000), and sentinel data from ante-natal clinics.
- About the impact at the sector and company levels, it is acknowledged that most of the analyses are based on sometimes a single survey (WB 1997), or too few observations (Over 1992); and that studies at the company level generally use existing company data and collect limited additional data (Loewenson and Whiteside 1997). It must be added that most of the data have been collected in large companies, whereas little information is available on how HIV/AIDS affects micro and small formal and informal business. And among the various costs and effects of the epidemic, the link between HIV/AIDS and other health and human resource development in the workplace (the qualitative dimensions of work performance and organizations such as skills sharing, participation in production decisions and morale) is poorly documented.
- Last, despite growing evidence of the effectiveness of companies' prevention efforts, information remains limited to a few case studies (AIDSCAP 1999). Especially, there is an admitted lack of cost-benefit analysis to assess the effectiveness of workplace-based programmes.

Methodological difficulties

- Macroeconomic models are subject to the most important methodological difficulties as they are highly dependent on debateable assumptions regarding AIDS, such as treatment costs, dis-savings, productivity of people living with AIDS, or investment rates (Over 1992). Cohen argues that *macro-modeling gives at best an indicator of the potential scale of the impact* (1999).

- The difficulties in predicting the future impact are even bigger than those to estimate the size of the current impact, for nowhere has the epidemic run its course. Using *average costs* rather than *marginal* costs when calculating AIDS-related costs may lead to misrepresent the increased medical treatment or lost production cost if the increase in deaths increases the scarcity of medical resources and of certain class of workers, thereby increasing the average costs as the epidemic progresses (Over 1992).
- Another problem with projections is that responses from economic units are not taken into account, as shown by the differences between *early assessments*, their revision once *coping strategies* were taken into account, and *the long-term impact* after the coping strategies reach their limit (WB 1999).[4] Very little is known about company's revision of decisions regarding resources allocation and production strategies (Loewenson and Whiteside 1997).
- The structural relationship that determines the impact such as HIV/AIDS and costs, and HIV/AIDS and revenues for employers, is not properly documented (Cohen 1999, ILO 2000).
- Another main difficulty in measuring the macroeconomic impact of the epidemic comes from the many other factors apart from AIDS that affect economic performance. For instance, the increased death rates studied at the company level have not been compared with the rates of worker attrition from other causes (WB 1997).
- Capturing the effect of AIDS requires various disaggregations of the labour force (according to the schooling level, the economic sector, the type of area) that are sometimes impossible due to the lack of data or observations (Over 1992). In particular for companies, one can hardly disaggregate the effects of HIV/AIDS and those of companies downsizing resulting from structural adjustment programmes; Loewenson and Whiteside (1997) argue that the latter may hide the impact of AIDS.

Concluding remarks

The general assessment about HIV/AIDS economic impact is that, whether it has so far been limited, the devastating effect of *a tidal wave of AIDS cases* (Bloom and Mahal 1997) may be yet to come. The limits in capturing the impact of the epidemic in figures raise several questions and indicate orientations for further research.

- First, in addition to *what are the costs?* it is recommended that forthcoming studies bring the question *who is bearing the costs?* to the foreground
- Second, rather than household and macro levels, sector and company are seen as the most important or appropriate levels of analysis (Loewenson and Whiteside 1997); and among them key infrastructure sectors such as energy and telecommunications.
- Third, empirical work on the characteristics that lead to susceptibility and vulnerability to HIV/AIDS is scarce and more empirical studies are needed.
- Last, the strategies that are put in place to mitigate these factors, as well as cost-benefit analysis to assess the effectiveness of workplace-based programmes is considered as of first importance (UNDP 2000b).

[4] It has been estimated that direct costs to individuals in relation to their annual income could be around one fourth lower as a result of behavioural changes (Viravaidya and al 1993).

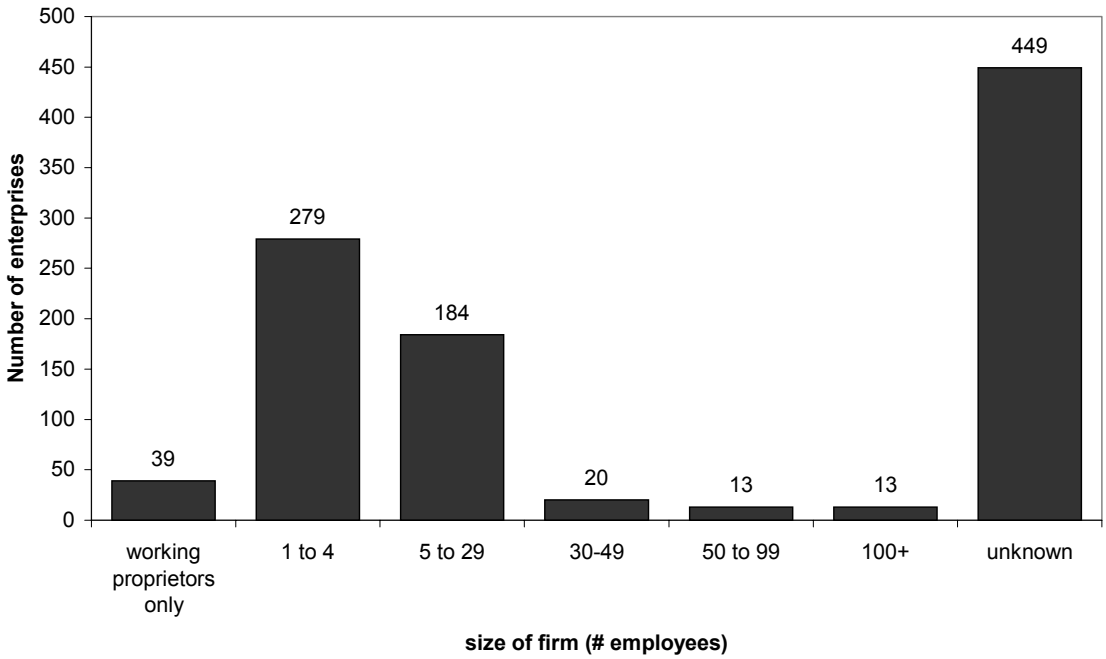
The Road Haulage and Transportation Company (Transport 1)

The creation of a road transport system has been the one of the most important pre-conditions for the economic and social development of Botswana. Botswana is a landlocked country positioned at the centre of the Southern African region. This geographical position has always presented significant challenges in developing its economy and providing essential services to its people. Today the system links most of the population and economic centres. The road network has expanded rapidly in recent years while the railway has specialised as a transit line for the movement of goods to and from neighbouring countries. Findings from research carried out by the BNPC indicate that long distance freight transport is on average, a relatively high value adding industry. In addition due to its capital-intensive nature it has a high level of labour productivity. This high labour productivity is accompanied by relatively higher remuneration for operating staff in the transport companies. The industry is dominated by few big players who compete intensely among themselves. This in part is due to the considerable start up capital costs that constitute high barriers to entry into the industry and the small size of the market. In addition Botswana transport companies are in competition with South African companies that bring in imported goods and are willing to sell the empty capacity relatively cheaply on the return leg. Most of the major transport operators are companies of South African origin and some are even managed from South Africa. Citizen -owned companies that operate on a large scale are a rare occurrence.

The contribution of the transport and communications sector to the GDP of Botswana has been steadily increasing in real terms throughout the 1990's, while the industry has undergone considerable economic centralisation. Transport1 is relatively large in Botswana terms. In September 1999 there were 1001 operating establishments in the transport & communication sector in the whole country. 83% of them were in 5 areas – Gaborone (549); Francistown (93); Selebi-Phikwe (72); Lobatse (64); Maun/Ngamiland (56). 62% of them were unregistered (627/1001). The annual number of new registrations of companies has come down from 1985 from the 20's per year, to less than 10 per year in the late 1990's, showing an increasing concentration in the formal road haulage industry, and an increase in the number of informal, unregistered operators.

The road haulage industry in Botswana and RSA has been under tremendous pressure in recent years with take-overs and restructuring continuing. Costs of operation are rising with the imposition of VAT on Botswana operations, and the proposal by Government to introduce domestic road user charges, as well as the escalating capital costs involved in maintaining and renewing the fleet. These costs are causing some of the bulk clients to move away from road to rail (for example the cement haulage business). The overall picture for the sector is therefore one of increasing concentration, higher productivity, and greater capital-intensity.

Figure 5. Botswana road haulage enterprises by size of enterprise, 1999.



Source: Republic of Botswana: transport and communications statistics 1999; CSO October 2000.

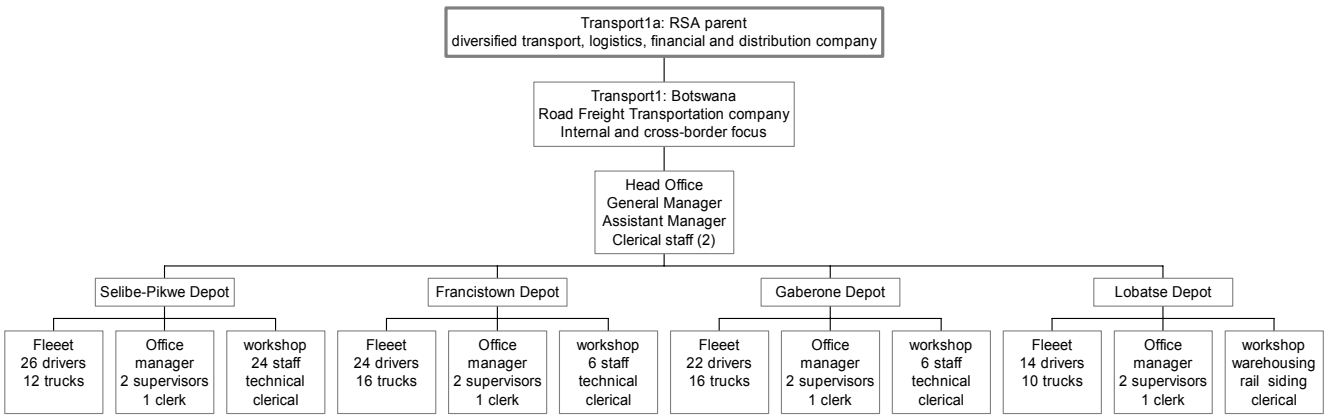
It has been argued that many people working in the transport sector are mobile, which affects their exposure to HIV/AIDS. It is further argued that due to the specialised nature of many jobs in the industry, the transport sector is more vulnerable to the impact of chronic and fatal illness amongst its staff, compared to many other industries. Finally as a result of its central importance for economic development the impact of the HIV/ AIDS pandemic on the transport sector will have significant implications for most other sectors.

Transport1: Company history and description

Transport1 is a subsidiary of a larger parent company based in the Republic of South Africa. The parent company (Transport1A) began operations in RSA in 1962 as a subsidiary of an UK-based company, incorporated in RSA, which acquired a large freight company listed on the Johannesburg Stock Exchange. In 1993 the RSA group began diversifying, and is now a diversified transport-, distribution-, and logistic company, with most of the business being of a long-term contractual nature. The group is active throughout sub-Saharan Africa, employing a total of around 8200 employees.

The Botswana freight division (Transport1) was started in 1969, initially as a "sleeping partner" to obtain transit permits to Zambia, because of the closure of the Rhodesian/Zambian border. Till 1985, operations in Botswana were very limited, but thereafter its operational capacity was increased with a parcel service to Gaborone, and full container loads of consumer products using 3 or 4 vehicles. During 1987, the company began hauling fuel to Lobatse/Gaborone and Francistown from Durban and Johannesburg, and the fleet increased to 15 vehicles. The Botswana company has continued its expansion, and now has a fleet of 45 extra-heavy duty vehicles, employing around 200 total staff, 50% of whom are drivers (just over 1.5 drivers per vehicle), the rest being technical and managerial staff. The company's annual turnover is around P60 million, and it is now one of the largest road haulage employers in Botswana. Only 2-3% of the companies in the road haulage sector whose size was known had more than 100 employees in 1999 (figure4).

Figure 6. The organisational structure of Transport1



The target core business for Transport1 is long-term contracted haulage on regular regional routes for companies connected mainly to construction and the nickel/copper mining industry. The contracts are usually 3-year contracts, and the company is always looking for opportunities to increase the contract length as a hedge against competition. However, the company's workload is still dominated by general haulage on an ad hoc, short-term basis. The company has an import/export licence in Botswana, and cross border operations include cargo to Zimbabwe, Zambia, and Malawi.

Skills profile and development

During the 1990's, the skills profile of all personnel in the company has tended upwards, as competition in the industry drives technology to more sophisticated levels. Long distance trucks are extremely large capital equipment outlays (over 1 million Pula), and maintenance of these units is becoming very specialised. In the year 2000, the company had to replace 32/50 units. With the usage and wear-out rate of these units as of year 2000, vehicle replacement is now planned every 4 years, or 750'000 kms, whichever comes first. There is consequently an emphasis on higher education level requirements for everyone in the company, from drivers, to maintenance personnel (workshop staff), to managers. As a result of this policy, the proportion of employees with a high school qualification increased from 30% in the early 1990's to 75% at the present time.

From its early days as a low-skill, low capital operation in 1985, the company has thus gone through a transition to higher-skill and capital intensive modes of operation. This involves:

- more comfort in cabs for drivers, air conditioning, radio and semi-automatic gear-boxes
- longer distances and fewer "pit stops"
- quicker turn-around times for maintenance and repairs (with more complex repairs done by the truck suppliers)
- greater and more specialised skills requirements for workshop staff
- constant communication from depot to cab (cell telephone) and monitoring of driver performance (bakkies following trucks were replaced by helicopter surveillance in the 1980's, and finally by tachographs in all trucks in the 1990's)
- better management of trips to avoid empty trucks crossing each other on the road (tight control over estimated times of arrival and departure – central vehicle despatch planning)
- greater emphasis on higher capacity utilisation and efficiency at higher unit costs.

Most of the delivery work is palletised, with mechanical loading techniques, so drivers do not travel with a support staff of labourers. Sometimes they employ casuals ("from off the street") to tie tarpaulins.

Truck drivers; labour shortage

There is a chronic shortage of qualified extra-heavy duty truck drivers in Botswana. When Transport1 requested the Ministry of Labour to inform them about work seekers with driving qualifications a few years ago, it was informed that there was an overall shortage of such labour in Botswana, and that the company should start its own training programme. Transport1 (alone amongst Botswana road haulage companies) has initiated a driver-training scheme, to train up to extra-heavy duty competence. 56 drivers have been trained in this programme over the past 3 years. Turnover of staff is a major problem (approximately 10% per annum), and is ascribed to the extreme stressfulness of the work – drivers work nearly 15 hours per day carrying high value and in many cases dangerous cargoes (fuel). They are responsible for their loads and vehicles at all times (security is not adequate at truck stops where they sleep). The busiest times for drivers are weekends and holidays, which means that the hours are about as anti-social as its possible to get. The company recognises that employees hired with work experience in other industries do not last long in trucking, and so it concentrates on hiring literate school-leavers with the hope that they will adapt to the "life on the road" – being without family responsibilities and young, strong and healthy. However, this is the age group most exposed to HIV.

TRANSPORT1: TRAINING PROGRAMME TO MEET OPERATING STAFF TURNOVER

The company training programme for new drivers takes about 3 months, and there are places for up to 12 new trainees per year, which is the calculated requirement, taking turnover into account. The main costs of training are the wages paid during the training for less than peak performance (it can take up to one year or even more for drivers to achieve really efficient work practices), and the costs of wear and tear on the vehicles used by trainees – which has been estimated at 30-50'000 Pula per trainee

Workshop staff

The workshops are also undergoing a rise in skill levels, propelled by sharper emphasis on productivity management, and the increasing technological sophistication of the trucks. The company perceives a shortage of artisanal skills of sufficient level in Botswana. The productivity measures used in the Gaborone workshop are:

- time for repair (there is a standard time for each type of repair)
- the time the truck spends in the workshop and not out on the road (from arrival to departure)
- The number of breakdowns in the fleet per unit time.

The company is planning to move to performance appraisal and merit payment systems in the workshops based on these measures. In January 2001, the workforce in the Gaborone workshop was halved, whilst skill levels were increased through the employment of two expatriate experienced mechanics, with no change in workload. The costs of this exercise were increased salary levels for the higher skills employed (the two mechanics earn 4000-4500 Pula), the loss of time during the replacement period (around 2 months), and the extra cost of employing expatriates (relocation, potential impermanence, and higher salaries than Botswana nationals). The benefits were lower manning levels due to the higher skill and efficiency levels, and the possibility of implementing tighter controls over the labour process due to the institution of new productivity targets and payment systems.

Managerial staff

The general upgrading of skills for the company's strategy of tighter management of costs and resources applies also to the managerial cadre. Transport1 was established in 1985 with an expatriate senior manager from the parent company, and there were other supervisory and managerial staff from RSA. This generation of managers now has to be

replaced and there is something of a succession problem in the perception of current management. The company is mindful of the general policy preference in Botswana for Botswana Nationals to be employed where skills are available. Accordingly the company is attempting to train up depot managers (some of whom are ex-drivers) to take over senior management posts in the future. However, there are problems with education levels, and the company would ideally like to employ already qualified and experienced senior managers, but according to senior management the pool of these in Botswana is too small.

THE PROCESS OF REPLACING DEPOT MANAGERS AT TRANSPORT1

Depot supervisors are recruited from amongst the drivers at present. For example, when a supervisor recently retired, 3 drivers were detailed to learn his job over a period of 3-4 months, which meant staying at the depot for more time. After this one of the drivers was selected, and the other two told that they were on the list for promotion.

Industrial relations, work organisation, and working conditions

There is no union operating or recognised in Transport1, so policy and terms and conditions of employees are fixed unilaterally by senior management rather than through collective bargaining processes. This means that conflicts play themselves out through individual and informal actions by employees, or workgroup norms, countered by various rules which management tries to implement to gain control over labour processes. The continuous move towards higher capital outlays requires greater and greater discipline over the drivers. This has been extremely difficult to achieve with such high turnover, and in a context of labour shortage. Once trained, the drivers are highly sought after in Botswana, and are therefore frequently moving between different trucking companies. For example, qualified extra heavy duty drivers have tended to move to companies which have just renewed their fleet rather than stay with a company whose fleet is ageing (and therefore more dangerous and uncomfortable to drive). They will also move to where they believe bonuses and wages are higher. The shortage of qualified labour in Botswana and the lack of collective bargaining arrangements at company or industry level makes this a viable strategy for drivers attempting to improve their terms and conditions of employment.

TRANSPORT1: REPLACEMENT OF ENTIRE WORKSHOP STAFF

In the Gaborone workshop, the move to higher skill levels was greatly speeded up by a drastic industrial relations breakdown in January 2001, (and this special circumstance provides an indication of the issues around replacement of workshop staff in the case of loss due to HIV/AIDS). Previously, annual staff turnover in the workshop had been limited to 1 out of 12 in 1999 and 2000, and this was the pattern since the early 1990's. However, in early 2001, the entire workshop staff was dismissed for striking in solidarity with a staff member who was dismissed for theft. It took two months to replace the entire staff. This was not regarded as excessive, and was manageable as the fleet had just been renewed, so breakdowns were relatively infrequent, whilst urgent work could be allocated to the other company workshops at the other depots. The workforce was halved, and the average skill level increased (two experienced expatriate mechanics were hired from RSA each with 4 years training plus 2 weeks on the specific trucks used by Transport1). Generally, the policy of the company is to comply with Botswana government preference that nationals should be employed over expatriates wherever the skills are locally available, but the choice of expatriates in the workshop demonstrates a general shortage of skilled and experienced labour of this kind within Botswana.

As a result of these dynamics, Transport1 lost 18 of the drivers it had trained to competitors last year. Its response has been to institute an internal rule that drivers who move to other companies will not be re-hired if they apply to come back to Transport1. This rule is expected to enforce greater loyalty amongst trained drivers, which in turn is expected to facilitate greater control over drivers' labour by limiting their mobility. Despite the problem of "poaching" of trainees, the company still regards the training programme as essential for its survival.

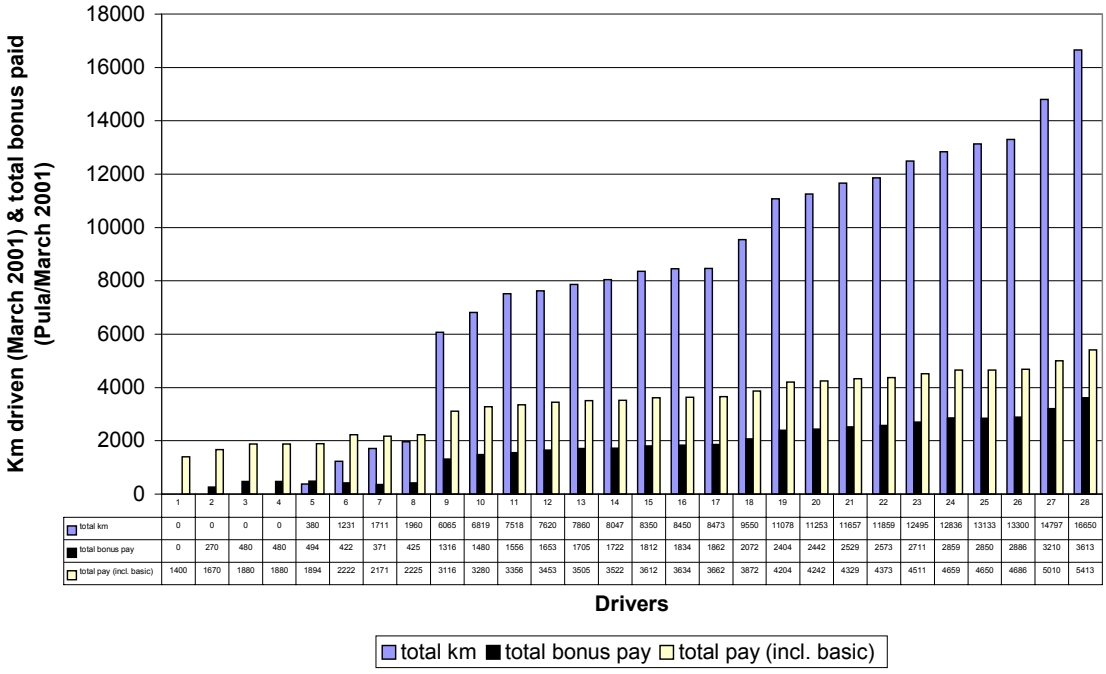
Health and Safety at Work: the links between driver and truck safety, working hours, and HIV/AIDS

Truck drivers are paid a basic monthly wage of 1400-1800 Pula (depending on experience), plus a "kilometre bonus". The monthly bonus is 15Thebe (1T=0.01Pula) per km from 4000 km to 14'000 km, and 21.7T thereafter. Driving trucks is prohibited by traffic regulations between the hours of 6pm to midnight on weekends and public holidays. In addition, internal company regulation since 1st march 2001 bans all driving between the hours of 10pm to 4am every night. This rule intends to reduce the incidence of truck hijacking, as the trucks are regarded as safer parked in truck stops with drivers acting as security guards. There are also company rules on rest periods and travelling speeds for safety reasons. These rules are meant to work against the tendency of the kilometre bonus scheme to encourage speeding and other unsafe practices such as extremely long times behind the wheel. However, the enforcement of these rules is devolved to the supervisors at the depots, and there is often collusion between them and the drivers in allocating trips to drivers, and "looking the other way" when restrictions are broken to earn higher bonuses.

Figure 6 shows a sample distribution of km. bonuses and total wage for the Gaborone depot in the month of March 2001, when there were 12 commercial load drivers, 5 trainees, and 11 fuel tanker drivers. 8 of the drivers (including the 5 trainees) are driving an average of only 70kms per day, and earning very little more than their basic pay in bonus. This reduced capacity from new and newly trained drivers is one of the costs of the training programme and the shortage of labour in this category. A second group of 10 drivers were driving between 6000 and 10'000kms in that month, being an average of roughly between 215 and 315kms per day, with around 50% of their wage being bonus. A third group of 10 drivers drove an average of between 375 and 580 km per day, with around 2/3 of their total wage being bonus. It is this third group who stay away from home for extended periods on long round trips, and are therefore most exposed to the risk of HIV/AIDS, and probably also the risk of traffic accidents on the road.

The company now has a safety policy with designated responsibilities as of February 2001, and this may reflect the increasing costs associated with accidents, as the units become more expensive, but also the escalating numbers of serious injury truck accidents occurring on the roads in the years 1998/9 (figure 7). No figures were available from Transport1 to verify whether its accident rates followed the general industry trend (the company has only very recently established a systematic internal surveillance system for accident reporting, and the present champion of that project is leaving the company). The kilometre bonus system is the only real control system managers have over the drivers' output, and there is an obvious conflict between it and safety considerations and rules such as speed limits, and rest periods and driving hours limits. In addition, there is some concern internationally in the trucking industry about AIDS-associated "dementia" affecting driver safety, but there has been no attempt to study the link between HIV/AIDS and driver accident rates.

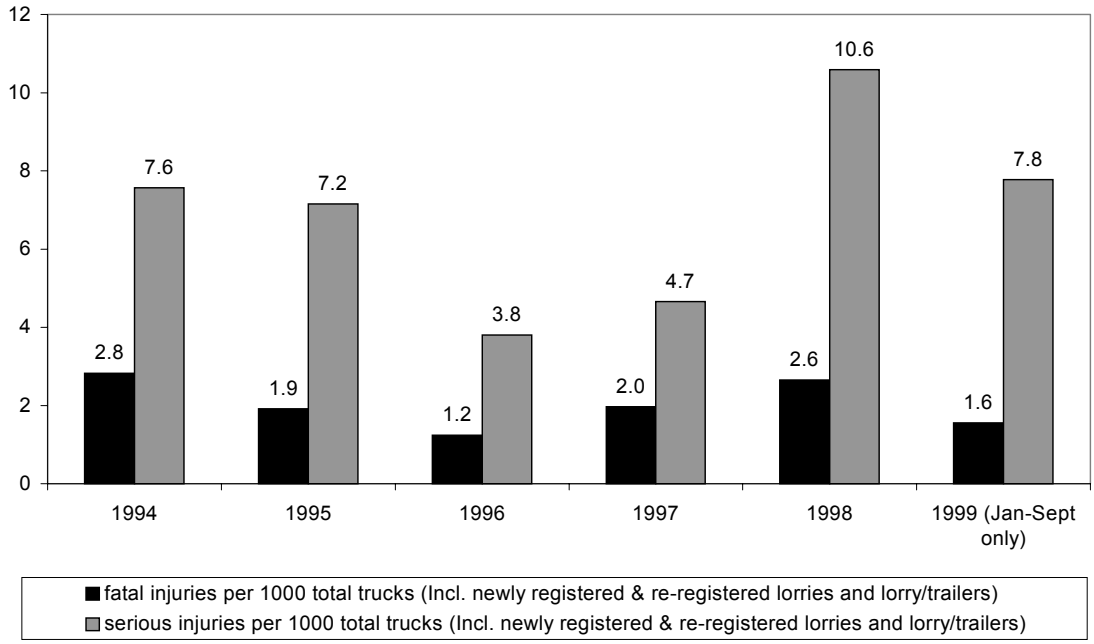
Figure 7. Sample record of monthly km driven and bonus paid per driver, Gaborone depot, Transport1 case study, March 2001.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
total km	0	0	0	0	380	1231	1711	1960	6065	6819	7518	7620	7860	8047	8350	8450	8473	9550	11078	11253	11657	11859	12495	12836	13133	13300	14797	16650
total bonus pay	0	270	480	480	494	422	371	425	1316	1480	1556	1653	1705	1722	1812	1834	1862	2072	2404	2442	2529	2573	2711	2859	2850	2886	3210	3613
total pay (incl. basic)	1400	1670	1880	1880	1894	2222	2171	2225	3116	3280	3356	3453	3505	3522	3612	3634	3662	3872	4204	4242	4329	4373	4511	4659	4650	4686	5010	5413

Overtime pay is not paid, so there is no need to record individual drivers' working hours for payment purposes. It is assumed that the bonus payments are more than enough to compensate the drivers for the loss of overtime pay. Trips, hours and bonuses are negotiated individually between the drivers and the supervisors, in invisible transactions which management cannot monitor. There were general guidelines at the depots on length of trips; e.g. for the Durban trips, which should normally take 3 days, the recommended pattern was for drivers to take 3 days off on return. However, there is no clear monitoring of the extent to which these guidelines are adhered to, and the actual pattern of work is governed by deals between drivers and supervisors over bonuses, truck breakdowns and other accidents, and increasing demands from customers to dedicate trucks to them to increase customer flexibility (which decreases the company's ability to schedule trips for drivers).

Figure 8. Rate of fatal and serious accidents occurring amongst trucks registered in Botswana, on Botswana territory, 1994-1999.



For all these reasons Transport1 has no way of monitoring, controlling or reducing the average time spent by drivers away from home (a key HIV/AIDS risk factor).

Susceptibility and vulnerability to HIV/AIDS

Since there are no current figures available on HIV prevalence in Transport1, there is no objective measure of susceptibility. However, there are some factors which would lead to the conclusion that the company is particularly susceptible to the impact of HIV/AIDS. These are:

- the age distribution of the workforce; for example, the Gaborone depot was reported to be concentrated in the age group 25-45, and the average age will drop as more school-leavers are employed through the training programme, along with the company's policy of not attempting to gain recruits from other industries
- The fact that a good proportion of the drivers spend extended periods of time away from their families, living on the road, and that they have sufficient money to buy sex makes them particularly vulnerable to infection with sexually transmitted infections (STI's).
- The overall concern that HIV/AIDS can affect mood and brain states, and the possible impact of these effects on driver safety, truck security, and public safety.

There is a growing literature on the susceptibility of long distance road haulage drivers to HIV/AIDS[6789], and this will not be reviewed here, except to say that one important conclusion is the fact that HIV/AIDS must be regarded as an occupationally-related disease for long-distance truckdrivers, and not a "lifestyle disease".

There were various pointers to the degree of infection amongst the drivers in Transport1 over the years. The company had conducted one round of compulsory HIV-testing for drivers in the early 1990's in which the infection rate of drivers was reported as being around 70%[10]. Those who tested positive on the screening test were requested to go to Johannesburg where they could receive the results of their test and counselling. However, this had the unfortunate effect of making it clear to all in the company who had tested positive. The testing programme was stopped because of its cost and possible violation of constitutional rights to privacy. No voluntary testing programme has been instituted at the company since. Furthermore, job applicants were also tested (pre-employment testing), and 50% of them tested positive over a certain period of time. Again, records of the time period and the results were not available.

There is also other anecdotal information on prevalence rates. An older and very experienced ex-driver who had joined the company as a driver at the beginning in 1985, but who is now working as a driver trainer, sight tester and HIV/AIDS coordinator for the company, told the discussion group that he was the only survivor amongst all the drivers who were with him in the company at that time. The rest (around 30 people) had all died of HIV/AIDS – although not all whilst they were still employed in Transport1. Drivers keep in touch with each other on the road and know about and attend funerals also after their colleagues have left their particular company. There were various other estimates of the rate of death or sickness from AIDS amongst drivers; one was that 4-5 people had died since 1985, with another 15 moving to other companies when they became sick, and dying 6 months later. Several respondents in clerical positions reported that they were able to tell if a death was due to HIV/AIDS because of information on medical records submitted for Provident Fund processing after death. According to them, these records showed that 18 drivers had died *since 1996*. Again, no figures were made available to the research team.

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[6] Impact and USAID; *Corridors of hope in Southern Africa – HIV prevention needs and opportunities in four border towns.* Family Health International 2000. Cooperative agreement HRN-A-00-97-00017-00

[7] Gilbert U; *Annotated bibliography and directory of materials on HIV/AIDS in the road transport sector in Southern Africa*; EU/GTZ project no. B7-6211/99/009.

[8] Bikaako-Kajura*; AIDS and Transport; the experience of Ugandan road and rail transport workers and their unions*; International Transport Federation, July 2000.

[9] Kraak G*: The road less travelled: government and civil society join against HIV/AIDS in the trucking industry*. Development Update, vol.3 No.1 1999 pp125-138

[10] This astoundingly high figure was given by the general manager, but there were no records to substantiate it.

TRANSPORT1; ASPECTS OF KNOWLEDGE, PERCEPTIONS AND ATTITUDES TO HIV/AIDS

In the case of Transport1, discussions with a small group of drivers, supervisors, clerical staff and workshop staff confirmed that at least some of the drivers regularly employ road-side commercial sex workers at well-known road-side stops on the various routes. It was generally understood that condoms were a protection against HIV/AIDS, and there was general assent to the proposition that women should have the right to insist that men use condoms, but there was disagreement over whether the men actually use them, either with the sex workers, or with their wives or girlfriends back at home. The one woman in the group disagreed with all the men, and insisted that "men do not use condoms". There was general agreement (with one male dissenting voice) that a person should know their HIV status. The drivers were particularly sensitive to being targeted as "spreaders of HIV/AIDS" because of their lifestyle – they were aware of a certain stigma attached to them because of opinion and information in the media about this. One experienced driver held the view that HIV/AIDS was spread because of the way people behave regardless of their occupation e.g. having unprotected sex, and intergenerational sex between older men who entice young women with money. One older and very experienced driver insisted that HIV/AIDS was brought to Africa by the whites. This view had no support in the group, and the driver himself agreed that both white and black people in Africa face the same problem with regard to the risk to themselves and their children.

Impact of HIV/AIDS on the company

Medical Costs

All employees in Transport1 are compulsorily members of BOMAID (Botswana Medical Aid), a private medical scheme with contributions and benefits dependent upon income level, and number of dependants. Bomaid is the largest medical scheme in Botswana industry. Transport1 pays 90% of the employee contributions. The majority of the staff is on the lower levels of contributions and benefits, and drivers' contributions and benefits are related to their basic pay levels, not their wages including kilometre bonuses. As of 2001 Bomaid advertises its HIV and chronic medicines programs, but these are not specifically mentioned in its "benefit subscription schedules"[11], and HIV/AIDS is not included in the standard list of "dread diseases", for which treatment has to be pre-approved and monitored by Bomaid. The drugs allocations in the lower levels of benefit schedules (which apply to most staff at Transport1) are entirely inadequate to deal with the current costs to the general adult public of anti-retroviral medication in Botswana. Outside of these contributions to Bomaid, the company does not itself pay any of the costs of medical treatment and/or hospitalisation, which might arise from HIV/AIDS-related illness. There are also no company medical or nursing staff, and paramedical staff are limited to two volunteer first-aides from each depot who are trained by the Red Cross at a cost to the company of 150 Pula per person.

The medical costs that can be attributed to HIV/AIDS for Transport1 are therefore limited to any increases in the contributions required for each member of the scheme which may be set by BOMAID from time to time as a result of the increasing costs of medication, hospitalisation and treatment for HIV-related illness. The increase in Bomaid contributions was 12% for 2000/2001 (compared to national inflation rate of around 8%), with no differentiation between different schemes and benefit schedules. This is expected to rise more rapidly in the future due to HIV/AIDS.

[11] Bomaid: 2001 Benefit Subscription Schedules, 1st December 2000.

In Transport1, there is no trade union, so when medical costs increase due to HIV/AIDS, the company can decide on how much of these costs it will bear. This contrasts with an industrial relations regime in which trade unions and companies bargain over medical aid schemes at company or industry level, where decisions over the relative distribution of increased medical costs between wages and non-wage operational costs are linked directly to decisions over wage increases. However, in the absence of this kind of collective bargaining over the non-wage benefits of employment, Transport1 still has to consider the labour shortages in Botswana of key staff (qualified drivers and skilled mechanics) and the general level of welfare benefits provided by competitors, which presents difficulties because employers in the industry are not organised.

Absenteeism & Sickness Benefits

There are no sickness absence figures which would be capable of tracking any increases due to HIV/AIDS at Transport1 for drivers. The "elite" high performance long distance drivers who drive long distances with the large articulated trucks can be out on the road for 22 hours a day, for weeks on end – they are the big bonus earners. Managers have to force these drivers to take formal sick leave and even annual leave, because of the powerful impact of the km bonus. When leave is actually taken, drivers are supposed to apply formally in advance for leave (whether unpaid, paid, or sick leave), but they do not generally do so, and deals are constantly made between drivers and supervisors about time off, none of which are recorded.

The policy of Transport1 in the past for employees living with AIDS has been to allow the sick driver to negotiate deals with other drivers and supervisors over missed trips. As the sicknesses progress, the periods of absence get longer and longer, until finally, when the driver is absent continuously for 3 months, the driver is suspended from driving duty on basic pay. The driver is then paid this basic wage until his death. The periods of home rest before death have been relatively short in the past (a few months at most, and often much less).

For drivers, therefore, the most obvious indicator of the combined effects of HIV/AIDS-related absenteeism and eventual death on the company are the numbers of trainee drivers required each year to maintain the planned ratio of drivers to trucks (currently 1.5/1 or 3/2) at the prevailing level of customer demand. At present this stands at a maximum of 12 trainees per year. However, this indicator is only partially related to HIV/AIDS, as turnover is due to other factors related to the general labour shortage and the industrial relations regime in the company, as discussed above. If the impact of HIV/AIDS increases in terms of driver deaths as various respondents suggested it would, both the required ratio of drivers to trucks and the number of trainees required per year will also increase unless customer demand falls proportionately.

Regarding other (non-driver) categories of staff (the workshop staff, and clerical/managerial staff), absenteeism is more routinely reported, although no data was made available to the research team on request, neither by the Botswana division or the RSA parent company. As mentioned above, to date there were no cases reported of HIV/AIDS deaths or chronic sickness amongst workshop staff. Since the workshop staff are all new to the company and there is now no routine HIV testing programme, there is no way of knowing what percentage of these staff are currently HIV positive, and therefore no way of estimating future costs of absenteeism and replacement.

A further aspect of absenteeism which was investigated was the potential for absenteeism by employees of Transport1 due to having to care for people living with AIDS in their immediate families. This would obviously not apply to drivers, whose job precludes them from being home carers, but it might apply to employees in other occupations in the company, especially women. One woman in a senior clerical position had been dealing with a close family member who was chronically seriously ill and unemployed and living in the same dwelling as the employee. This had

not affected her attendance at work at all, as she was able to draw on another (older female) member of the family to care for the sick person at home. As there was no data on absenteeism, it was not possible to assess the impact of home carer leave on the company for its entire non-driving staff over time.

Employee Death Benefit

The other main cost item in terms of non-wage benefits concerns the inter-relation between the company's provident fund and retirement pension fund. Transport1 has both a pension fund and provident fund, but due to cost only senior management and clerical staff are members of the pension fund, although both schemes are open to all employees. The Botswana Employment Act as amended in 1992 requires all employees who are not covered by pension or provident funds or other gratuity arrangements to be given by their employer a 5-year "severance" payment without leaving employment[12]. This gave rise to the growth of provident fund arrangements in companies. In Transport1 there is a joint contributory scheme which gives employees a payment of 60 days' basic wage after 5 years service, and 120 days' wage at every five-year interval thereafter. This fund does not otherwise provide for retirement, or benefits for dependants in the event of the employee's death, as does the pension fund used by managerial staff. However, there is an increasing number of requests from manual staff to convert from the provident fund to the pension fund, and this may be related to the dependants' benefit included in the latter outweighing the preference for immediate cash payments during the life of the employee. This could be an impact of HIV/AIDS.

Funeral Benefit Costs

Transport1 has a funeral and group life insurance policy taken out at the low cost of 9 Pula per driver per month. The funeral benefit at this premium is R5000 Pula, while the death benefit is a lump sum payment of 42'000 Pula. The main costs of funerals to the company are therefore the lost time taken by employees to attend funerals, both of their colleagues in the company, and of people outside of the company. When a truck driver is buried, it is the custom for other drivers to attend the funeral. The company's policy is that this is permitted on application for leave, and the driver is then paid only the basic wage and no bonus.

Productivity losses

Transport1 does not keep any reliable measures of its own productivity over time. As mentioned above, due to its total change of staff the workshop in Gaborone is beginning to develop and record measures which relate to one or other indicator of productivity (sample times for jobs, turnaround times for unit maintenance etc). It is not clear to what extent these measures are being developed in other workshops in the company at other centres. Driver and clerical employees' productivity is not measured. Accident and incident rates have not been calculated in the past for drivers, although there is a move now to beef up and systematise the collection of data for an HSE monitoring and evaluation programme. There was therefore no reliable data in Transport1 which could indicate whether there had been any change in average productivity rates over the past years.

None of the respondents interviewed from the company were able to pinpoint any productivity effect of HIV/AIDS as yet. Any effects on morale amongst staff were not acknowledged, and there was a general statement that being sick with HIV/AIDS did not carry with it any stigma from other members of staff, although there is no explicit company policy on the aspect of discrimination. There were no refusals to work with sick co-workers, or other industrial relations problems arising. The lack of any perception of productivity losses due to HIV/AIDS and the lack of any measurement of productivity in the company probably stem from the same source: the lack of any real concept of productivity within the company up till very recently.

[12] Takirambudde and Molokomme (1994), *The new labour law in Botswana*. Southern African labour monographs 1/94. Labour Law Unit, University of Cape Town.

TRANSPORT1; HIV/AIDS AND THE COST OF FUNERALS

The cost to the company of having one truck idle for one day was estimated at 3000 Pula. Thus when all drivers in the Gaborone depot attend the funeral of a driver who dies from AIDS, the cost is estimated at around 54'000 Pula. This cost will obviously increase if the rate of HIV infection and AIDS amongst drivers continues to increase as various interviewees predicted. Up till now, most funerals occur traditionally over the weekend, and so would not affect the performance of work in the workshops and in the offices. However, funerals are beginning to take place during weekdays, and this will affect all types of occupations in the future.

Measures taken against HIV/AIDS

Transport1 has no senior level manager with dedicated responsibility for coordinating the approach to HIV/AIDS. Instead, an ex-driver in the Gaborone depot has been given responsibility for HIV/AIDS education amongst other duties. It emerged in interviews that he is not given freedom by the company to move between the different depots to conduct his education work, and himself has very limited training (5 days training on one occasion provided by an NGO), and a low general education level. Nevertheless, he takes his duties seriously and makes sure that condoms are available to drivers, and counsels them to use them. He also counsels sick drivers to stay with the company so that they can get the benefit of basic sick pay at the end of their illness right up to their death. The costs to the company of this activity is minimal (condoms are free) and not calculable anyway. Its effect is also questionable as we have seen, since there was some doubt about whether the condoms are actually used. The company provides no medical service or drugs for HIV/AIDS (or any other illness), and has no voluntary testing and counselling programme, and conducts no knowledge, attitude and perception studies amongst staff. There is no attempt to develop customised road stops on the main routes where reproductive health services and advice can be given. The links with the community are of the tax-deductible humanitarian/paternalistic nature (building and staffing an orphanage with preferential access for the orphans of company staff) rather than being seen as an integral part of preventive activities.

Thus, despite the very high levels of HIV prevalence detected in compulsory testing in the early 1990's, and the deaths of drivers since that time, the company's spending on HIV/AIDS prevention is still absolutely negligible. This suggests that the perception of management is that the impact of HIV/AIDS is limited to the drivers, and containable by means of the training programme for replacement drivers, and that by this means its market position will not suffer vis a vis its competitors.

HIV/AIDS and the parent company in RSA

The parent company of Transport1 (referred to hereafter as Transport1A), located in South Africa, is considerably larger, and has progressed considerably further along the road towards a comprehensive response to HIV/AIDS than its subsidiary in Botswana. This section will describe this programme and some quantitative data on the impact of HIV/AIDS in the company. Furthermore we will discuss the possibilities for the Botswana subsidiary to consider regarding its HIV/AIDS programme[13].

In 1997, the then Minister of Transport in RSA, Mr. Maharaj, had identified HIV/AIDS amongst road transportation workers as an area of priority. The Department of Transport therefore initiated discussions with the parties to the National Bargaining Council (NBC) for the road freight industry. Most employees of the large road freight companies in RSA are members of trade unions which are recognised by employers. The unions negotiate on an industry wide basis in the NBC over terms and conditions of employment and welfare and other benefits of employment. These negotiations set minimum wage levels and maximum working hours restrictions, and deal with issues relating to all labour legislation such as the Skills Development Act, which requires the setting up of an industry Sector Education and Training Authority (the TETA) using a statutory wage levy of 1% from all employers. In addition, company level negotiations add to agreements made at industry level. The discussions in 1997 led to a concerted approach to the HIV/AIDS problem in the road freight industry to target the drivers as a "high transmission area", and to assist in developing a preventive and promotional programme to improve their health and welfare at work. The partners were the Department of Health, the Department of Transport, the NBC, the Road Freight Employers' Association, the trade unions active in the industry, the commercial sex workers (CSW's), and NGO's and independent specialist organisations with expertise in the areas of general skills training in the industry, HIV/AIDS training, and epidemiology. The main elements of the campaign which ensued were as follows:

- identification of "hot spots" – roadside stops where truckers buy sex commercially
- survey of 374 drivers at these hotspots focussing on:
    - ♦ age profile, language etc.
    - ♦ past exposure to HIV/AIDS education
    - ♦ general knowledge about HIV/AIDS and sexually transmitted infections
    - ♦ sexual partners
    - ♦ condom use
    - ♦ self-reported sexually transmitted infection rate and treatment aspects
    - ♦ their response to a proposal to set up clinic services at roadside stops ("operation hotspot")
- adoption of HIV/AIDS policy guidelines by National Bargaining Council 1999, dealing with:
    - ♦ reducing the effects of the pandemic on the employers, the employees
    - ♦ managing employees with HIV/AIDS and related issues in an ethical and caring way
    - ♦ ensure that people living with AIDS are treated fairly
    - ♦ non-discrimination
    - ♦ HIV testing and screening of employees and prospective employees non-compulsory
    - ♦ Welfare benefits (HIV testing not required for "sector controlled" benefit schemes i.e. those negotiated and controlled by the NBC).

[13] All information in this section on TRANSPORT1A is courtesy of senior management of the company, which is gratefully acknowledged.

- Confidentiality
- Dealing with refusal to work with colleagues who are living with HIV/AIDS
- Counselling and support of employees with HIV/AIDS
- Grievance and disciplinary procedures
- Termination of employment due to ill-health
- Workplace AIDS programme (education and training, condom distribution, voluntary HIV testing, infection control at work, STD care at work)
- Planning, sustainability and innovation

The concrete results of these studies and policy developments have been the following:

- Hotspot clinics with nursing staff have been set up at several roadside stops with government support – the aim is to roll out this programme nationally to a network of clinics around the entire arterial road system of RSA. Clinic services provided include treatment and referral for sexually transmitted infections amongst drivers and commercial sex workers. These services have been warmly welcomed by drivers because they are sympathetically and expertly provided, and because they are independent of the employers.
- The "learning clinic", an organisation with long experience in education and training in the road freight industry and HIV/AIDS issues was commissioned to run peer education and training for drivers and commercial sex workers (the latter including health care, family planning). This consists of a programme to promote the hiring by individual companies in the NBC of national HIV/AIDS coordinators, the selection and training of volunteer peer educators from within their ranks, and the running of education and training programmes by them for commercial sex workers and drivers in the hotspot roadside clinics, and at depots. The programmes are also rolled out to the community surrounding the clinics. Results show that the uptake of education and training programmes by drivers is considerably lower than by CSW's, and reports are that condom usage is still low by drivers. CSW's now charge higher rates for sex without condoms. The programme continues by addressing power/gender issues to empower the CSW's to determine safe sex practices.
- In 1999/2000, Transport1A commissioned voluntary saliva screening test programme for HIV that included 65% of the workforce. The overall average prevalence rate detected was 17.1% (24.4% amongst those aged less than 29 years). This unexpectedly low rate is said to be due to the fact that 80% of Transport1A drivers return home every night, and that their age profile is older (60% were over 40 years), and is perhaps biased by non-participation in the voluntary testing programme of more susceptible staff.
- Transport1A has attempted to assess the future costs of the HIV/AIDS pandemic, and in doing so had to make many problematic assumptions due to lack of knowledge:
    - There are no data on absenteeism levels and causes
    - The Department of Labour and the Transport Education and Training Authority (TETA) are subsidising employment and training of drivers, or upgrading existing licenses as part of the TETA programme, which has reduced the cost for the companies to the 1% statutory levy on the wage bill required by the Skills Development Act, some of which is rebatable. The company does not experience any shortage of drivers in RSA, unlike its Botswana subsidiary.
    - The cost of death and disability cover to the company has risen from 3.24% of salary in 1997 to 6.98% of salary in 2001 due to AIDS deaths and illness (annual deaths of employees from 1996 to 2000 were: 31, 33, 51, 53, 46).

- Few of the high-risk groups in the company choose to be members of medical aids, and rely on state services instead; this means that medical aid information on claims is not a reliable indicator of the impact on the company.
- The impact (costs) to all companies passes to industry wage negotiations (ring fenced this year at 9%) and tax costs.

Despite the gaps in knowledge, Transport1A has decided that there are considerable benefits related to continuing and intensifying its HIV/AIDS programme in collaboration with all stakeholders, despite the fact that its particular HIV prevalence rate is perhaps lower than for other industry players. Its main concerns at this stage are to encourage the unions to involve themselves more intimately in the attempt to change sexual behaviour patterns amongst their members (particularly condom usage with CSW's), and to extend and diversify the services offered at the roadside clinics network. One key concern is to work with the Department of Health on the eventual provision of anti-retroviral treatments for HIV positive drivers in the clinics; the company regards this as the necessary breakthrough for increased participation in the programme from drivers and CSW's. Transport1A stresses very strongly the point that services and training provision must be independent of employers.

A final area of concern is the area of benefit costs; Transport1A is stressing that death and disability benefits may have to be reduced to prevent the costs escalating (the company cites its Swaziland subsidiary which has halved death and disability benefits). The trade union position is to propose an increase in both employers' and employees' contribution levels to the schemes, independently of wage settlements. The company is concerned because it wants to maintain its ring fencing of minimum wage increase packages at the industry level, linking wage increases to benefit increases with an overall 9% limit in 2000/2001. Transport1A is looking at joining wider industry-based funds to increase the risk pool, and thereby lower costs of cover. These issues are not resolved yet, and are potential areas of industrial conflict in cases where benefits are reduced.

The comparison between the parent company in RSA and the Botswana division is very instructive. The parent company in RSA does not face a shortage of key labour such as drivers, and its training needs are paid for through the SETA levy system on the whole industry. Its HIV prevalence rate is also much lower in the year 2000 than was reported for the Botswana division in the early 1990's (which may be explained by its higher average age for drivers, and its smaller proportion of *long-distance* drivers). Nevertheless, the parent company has gone much further towards measuring and evaluating the impact of HIV/AIDS, and has taken much more far-reaching steps to mitigate the effects of the disease upon its workforce. A key determinant of this development has been the industrial relations framework in the enterprise and the industry in RSA. Both employers and employees are organised at an industrial level, and the relevant Ministry (Transport) has taken a pro-active role in addressing the question of HIV/AIDS in the industry through its interaction with these parties in industry forums. This has decreased the negative impact of inter-firm rivalry on the HIV/AIDS response, and increased synergies at industry level (policy formation, financing investigation of prevalence, and provision of services and training, raising the possibility of extending insurance cover over a greater risk pool). This in turn has both raised the profile of HIV/AIDS as a threat in the industry, and increased the possibility of doing something about it. Transport1A has strategically shifted its approach away from passive reaction to the pandemic (labour replacement) to management of it (prevention/reduction of HIV exposure for its workforce and equitable treatment of current staff living with HIV/AIDS).

The Botswana case is very different. Neither employers nor employees are organised in the industry, and there is no industry-wide collaboration and therefore no possibility of concerted action between the industry and the State services over the HIV/AIDS pandemic. This has prevented synergies and economies of scale in dealing with it. Measurement of costs, productivity and

HIV/AIDS impacts is rudimentary and ill-informed, which in turn has kept perception of the threat of HIV/AIDS to the enterprise at a low level. The Botswana subsidiary remains strategically in the reactive, labour-replacement mode with respect to the pandemic, and has not developed a meaningful response to the disease. In a highly competitive and dynamic industry such as road haulage, this strategy will compromise the market position and growth of the company if:

- Competitors take a proactive stance towards HIV/AIDS and begin to control the impact on costs and productivity/efficiency through successful preventive strategies; "competitors" may include the RSA parent company and other RSA companies in the era of free trade in SADC, and/or;
- The costs of the internal training policy for young, educated drivers to operate the increasingly high tech truck fleet spirals out of control as the pandemic takes its toll of these drivers unchecked.

If Transport1 begins to lose its competitive position as the pandemic continues, attempts to move to a preventive mode in dealing with the disease will be hampered by:

- The lack of collective bargaining in the company and the industry
- The lack of any mechanism to coordinate the efforts of haulage industry employers in the field of prevention, treatment, management of the HIV/AIDS pandemic, and in the area of staff benefits.

Summary of Transport1 – the impact of HIV/AIDS on productivity

In terms of the standard model of HIV/AIDS impact that was implicit in this research, the impact as reported is given in table 2. The research suggests that management of Transport1 perceives the impact of HIV/AIDS as concentrated amongst the drivers, containable by means of a) the training programme coupled with the "black listing" of trainees who leave the company for competitors after training; b) the strategic move towards higher levels of technology; c) the use of a highly incentive-based payment system to control absenteeism. However, we have seen that this effect may be offset by the fact that the more educated drivers are younger and therefore at greater risk of exposure to HIV. All managers interviewed took the view that the impact of HIV/AIDS upon the drivers would increase in the future, and many more would die at current infection levels.

Value Chain and Productivity

The items in the value chain are defined for Transport1 as follows:

Primary activities

- Inbound logistics includes receiving, storing and disseminating inputs needed to provide the service to other enterprises, and activities such as input material handling, warehousing and input inventory control.
- Operations are activities associated with using the inputs to provide the service, such as road haulage, loading and unloading cargoes, equipment maintenance and testing.
- Outbound logistics – there are none as the service is *defined* as outbound logistics for *other* enterprises.
- Marketing and sales comprise activities associated with enabling and inducing buyers to purchase the service.
- Service involves maintaining the value of the service provided through activities such as collection methods, security during transit, damage control for cargoes, accurate and appropriate delivery of cargoes.

Support activities

- *Firm infrastructure* includes strategic planning systems, communication systems and general management.
- *Human resource management* will typically cover recruitment, manpower planning and development, personnel administration and work organisation.
- *Technology development* refers to technologies applied in the service or in the processes used to provide it.
- *Procurement* is the function of purchasing the inputs used in the value chain such as raw materials (tyres, truck fleet, fuel etc).

The overall impact of HIV/AIDS on the productivity of Transport1 can be summarised as in figure 8 below.

Table 2. Case study Transport1: HIV/AIDS Impacts according to the ILO model (fig 3) (Interview data; impacts were only mentioned on drivers and driving operations)

ITEM / DIMENSION	**REPORTED TREND OR TENDANCY IN TRANSPORT1 - TRUCK DRIVERS THE ONLY RECOGNISED PART OF THE VALUE CHAIN AFFECTED**
Insurance cover	Funeral and life insurance policy - payouts increasing is impacting on costs of company contributions. Funerals mean loss of productivity and efficiency as drivers attend each others' funerals
Retirement Funds	No impact detected. Managerial and supervisory staff only on pension fund. The majority are on Provident Fund, which does not provide death benefits or dependants' benefit after death. However, more drivers now requesting membership of pension fund.
Health and safety	Industry trend towards greater incidence of serious accidents; company has instituted programme on HSE, which involves data gathering costs. ? Link between HIV/AIDS and truck accident rates?
Medical assistance	No impact detected yet. Company pays 90% of medical aid contributions - all staff are members. Premium however increased 12% last year. HIV/AIDS treatment costs limited to drugs used to treat opportunistic infections. No company medical staff.
Testing and counselling	No testing conducted: counselling and or education & training minimal; condom provision at no cost.
Increased absenteeism	Impact noticed but not measured - cover provided by maintaining ratio drivers/trucks, overtime worked, and incentive based pay.
Declining morale	Not acknowledged by respondents as significant
Loss of tacit knowledge	Death of experienced drivers replaced by trainees/inexperienced: it can take a long time to learn to use trucks efficiently
Loss of skills	Less educated drivers are being replaced by more educated young school leavers. Therefore gain in skills offset by loss of tacit skills above. New drivers are more high-risk age group, however.

Increased staff turnover	Various estimates of death rate of drivers - high turnover rate due to illness and death since 1985. Replacement costs have included development of in-house training facility for new drivers - maintaining 3:2 ratio of drivers to trucks. Training costs are basic salary for 3 months, costly damage to vehicles during training, and loss of trained drivers to competitors – the latter has been approached by preventing trained drivers who leave from returning to the company ("black list of disloyal trainees").
Increasing demands for training and recruitment	See comments above on development of training programme in house and ratio drivers to trucks. Company is targeting educated school leavers as trainee pool, who can adapt more easily to "life on the road". Has to compete with other less unsocial and gruelling occupations for educated youth for labour supply, however.
Declining productivity	Productivity of drivers maintained by kilometre bonus system, and training pool to maintain cover of absenteeism. The bonus is a high proportion of salary for long distance drivers. Company does not measure productivity.
Declining reliability	Workshops/management not yet affected by HIV/AIDS losses. Sufficient driving staff maintained by training programme, but loss of experience of drivers imposes a cost, and compromises efficiency of delivery.
Declining investment	Company is investing in fleet, at higher level of technology. This meshes with greater numeracy and literacy of driver trainees. However, higher skill levels and technology increases the impact of losses due to HIV/AIDS.
Declining markets, suppliers	No impact noticed or measured. Transport & communications continues to increase as % of GDP in Botswana; cross-border market increasing (although competition is severe). There is a question mark over the role of the Botswana division in the overall RSA company. What will be the effect of the implementation of free trade in the SADC? Will the reduction of tariffs and barriers to capital flows reduce the necessity of a Botswana division? Or will the Botswana division simply handle cross border haulage for countries further North? Is the Botswana division implicitly competing with the RSA parent company?

Figure 9. Transport1 case study: The impact of HIV/AIDS on the value creation and productivity process.

ACTIVITIES	RESULTS/IMPACT
SUPPORT	
FIRM INFRASTRTURE	No impact reported
HUMAN RESOURCE MANAGEMENT	Replacement and training of drivers (12 per year to retrain 3:2 ratio of drivers to trucks)
TECHNOLOGY DEVELOPMENT	Compromises recruitment strategy targeting younger educated drivers to operate hi-tech units
PROCUREMENT	No impact of HIV reported; fleet, fuel & some spare parts (e.g. tyres) are imported, and can be widely sourced
PRIMARY	
INBOUND LOGISTICS	No impact reported
OPERATIONS	Considerable, but not measured - includes training costs for drivers, funeral benefits and time lost, medical aid subscriptions escalation, absenteeism due to illness making efficient allocation of units to work more difficult, increasing demand of drivers for pension benefits to replace provident funds
OUTBOUND LOGISTICS	No impact reported
MARKETING SALES & SERVICE	To the extent that HIV/AIDS compromises efficiency inn service delivery, it compromises attempts to win crucial long-term haulage contracts

4 The transport company (Transport2)

Structure and workforce profile

Transport2 is what may be considered a rare success story of citizen entrepreneurship in the Botswana long-distance road transport industry. The company has grown from very humble beginnings as a small business to being one of the more prominent players in the industry. The company is still managed by the owner although it has now taken the form of a relatively large business with several functional units. The owner and director of the company maintain close personal contact with the daily operations of the company. In addition he maintains personal contact with all the staff. The management style can be described as somewhat paternalistic and steeped in strong cultural values. This style however gives the management first hand insights into the personal and social lives of employees on a daily basis.

Transport2 is made up of two major operating units. There is the Express, which is a medium and long distance bus service. This is the business upon which the company was established. The second operating unit is road freight transport. The organisation structure of Transport2 is as follows:

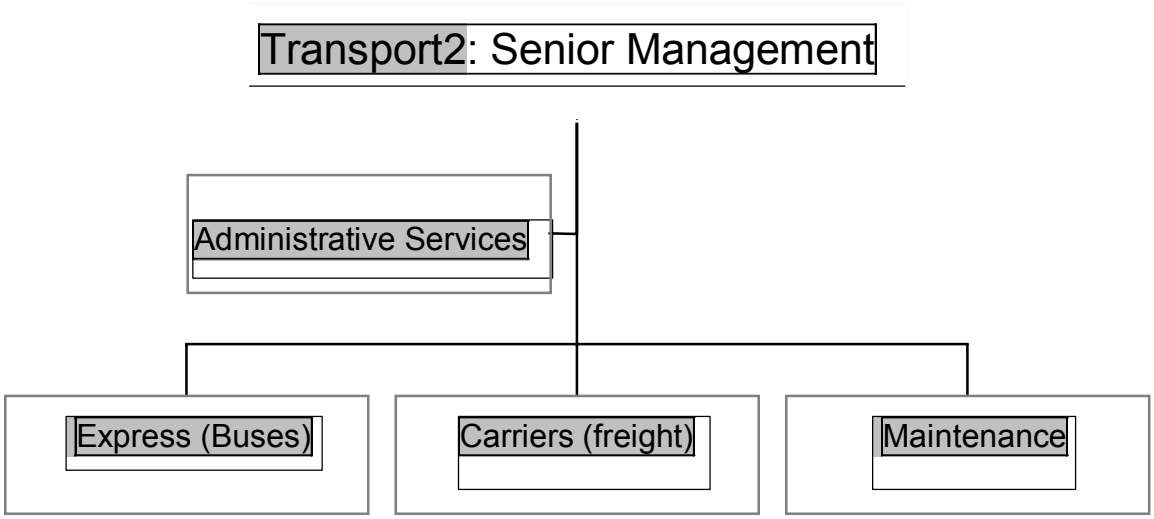


Figure 10. Organisational structure for Transport2 case study

The company operates a fleet of nineteen buses of varying standards of luxury. The operations are scheduled to a given timetable. Over the longer distances there are two departures daily to from Gaborone to Francistown and two departures in the opposite direction. On the Francistown-Maun leg there is one daily departure in each direction. Over the shorter distances Gaborone - Lobatse and Gaborone - Ramotswa there are numerous daily departures. The competitive approach of the bus operation is based on price/costs and differentiation through service quality. Although fares on principal routes are regulated by the Department of Transport the company claims to charge fares which are up to 14% below the standard fare. Their bus service also offers free refreshments on board and prides itself for punctual departures and arrivals and clean buses.

The buses operate with a crew of three. A driver, a conductor who collects fares and attends to the comfort of the passengers and a loader who loads and offloads passengers' luggage. The buses are also available for special hire for national and international trips. On the long distance services the bus crews are required to spend nights away from their home bases. The company pays for this accommodation and also provides the crews with a meal allowance. The quality of this accommodation is not known. It is also not known if the bus crews actually use the accommodation or if they have preferred alternatives.

The freight transport section consists of short and long distance freight operations, with a fleet of thirteen trucks with various trailer combinations. The company is contracted to move goods ranging from perishable foodstuffs to construction materials by some of the major manufacturing and retail companies in Botswana. The company can cater for once-off clients as well. Generally goods are moved to all accessible areas in Botswana as well as parts of South Africa.

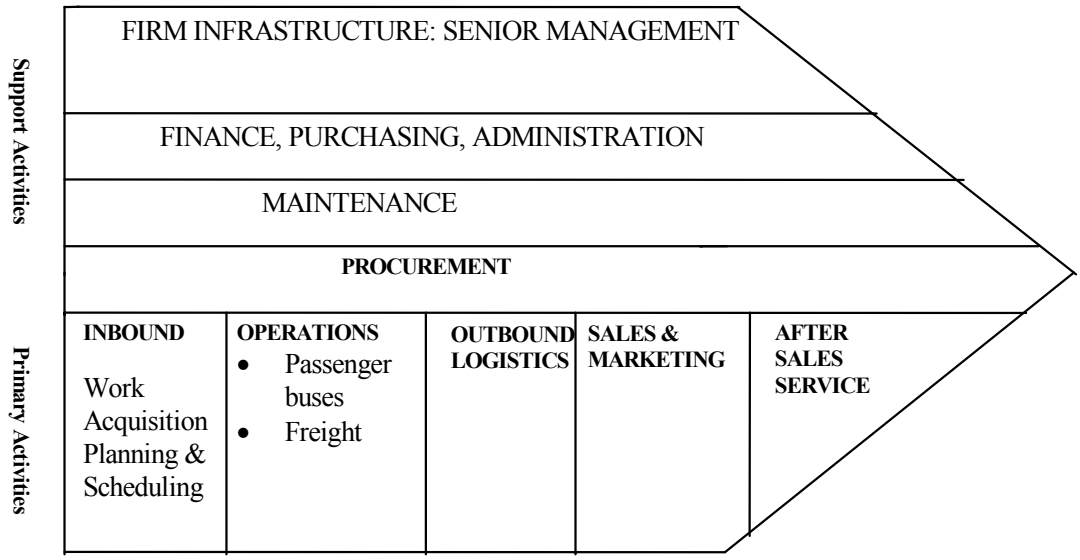
The long distance truck drivers are usually the most experienced and would have been with the company for some time. While there is a good deal of driver training offered within the company there is still a reliance on open market recruitment. It appears to be accepted that long experience is a key asset in the complement of drivers for a long distance freight operation. This requirement is relevant both in terms of proper handling of the vehicles, in terms of wear and tear and, and knowing how to manage different types of loads. As with the long distance bus drivers the truck drivers are routinely expected to spend nights away from home. The long distance trucks have a sleeping cab. They are provided with a meal allowance for the times that they are not on duty away from home.

The maintenance workshop is based in Gaborone. There is a small complement of management administrative staff at headquarters.

The company is owner-managed. As it has grown over the years there has been a need to create further support functions such as finance, general administration, purchasing and the maintenance unit.

In this value chain (figure 10) the highest cost area is operations. The main costs are fuel, tyres, vehicle wear and skilled labour. Efficiency in these areas is affected by the level of driver skill, experience and motivation. Drivers are trained and are then utilised at the wheel for the longest feasible proportion of their paid time.

Figure 11. Transport2 Value Chain



Company practices and staff issues

The majority of the staff is in the age range 25 to 35 years, a high-risk age group for HIV/AIDS. Long loyal service is highly valued in the company and progression within the company is encouraged. Recruitment is done on the open labour market. Bus and truck drivers are predominantly male and the bus conductors are mostly female. The employees of the company are not unionised and management appears to have sole prerogative over recruitment, maintenance of discipline and pay matters. The management believes that by meting out instant but fair disciplinary action in the case of misdemeanours and by providing generous rewards for outstanding conduct, relations between themselves and staff will be positive.

All the operating staff is paid on an incentive system. They earn a basic wage plus a kilometre bonus. The managing director also gives out ad hoc discretionary bonus payments. For example he has been known to spontaneously give operating staff up to P1000 for outstanding work. This may be given to an individual or given to a crew to share among themselves.

Susceptibility, vulnerability and the reported impact of HIV/AIDS

Transport2 has been hit extremely hard by the HIV/AIDS epidemic. They report 23 deaths over the last 24 months, but the total number of employees in the company was not released to the research team. The key observation is that all these deaths have occurred among the operating personnel - drivers for the long distance trucks and drivers, conductors and loaders for the buses. All these employees are the ones who travel and spend nights away from their homes. There have been no AIDS-related deaths noticed amongst maintenance or headquarters personnel.

SUSCEPTIBILITY OF TRANSPORT2 EMPLOYEES TO HIV

Operating staff acknowledges that that they have been practising high-risk sexual behaviour. Some said such behaviour is very common amongst them. They believe that there has not as yet been a profound behaviour change in their ranks. They further acknowledge that the nature of their work that takes them away from home for extended periods of time does put them at risk. The use of condoms is reportedly not very widespread. Management too is very aware of the high-risk behaviour of their operations staff, and they believe that they have a duty to dissuade their employees from engaging in these behaviours.

The high death rate has not had a major impact on operating capability as yet. The company has been able to find replacement drivers quite readily. It would seem that their in-house driver development and progression practice has helped the company absorb these early shocks. In the passenger division, conductors and loaders have a comparatively high rate of mortality but they are largely unskilled labour and their replacement has as yet not been a problem. However the management feel that this situation will change in the near future. This is especially so with long distance truck drivers whom in time may not be easy to replace. The company may be forced to use less experienced drivers. This will have important implications for operational performance in the future.

The company has experienced increased expenses in funeral assistance for deceased employees (there is a P5000 funeral benefit) and costs of sick pay. As the staff is not participating in any formal funeral or health insurance scheme this expense comes fully out of the company coffers. As this is strictly speaking not a formal arrangement this expense does not appear as an increased payroll cost. The management reports that staff has displayed a reluctance to voluntarily enrol in formal contributory health and death benefit schemes. They are, however considering making them mandatory for all staff in the company, to stabilise costs and make them more predictable. The company typically releases staff to attend the funeral of deceased colleague. This is generally a social expectation, and Transport2 complies with it. In addition the company provides a large bus to transport mourners to funerals. As a citizen-owned and managed company, Transport2 is expected to do more in the case of the death of an employee. The management is also expected to be more personally involved to the extent of attending all employee funerals. The result is that management time is also a factor in some of the costs. It is also possible that the paternalistic management approach legitimates these expectations and increases such social obligations.

Generally when someone falls ill they will continue working as long as possible on full pay. When they can no longer work then they are allowed to go home to obtain more intensive care. The company continues to pay basic wages until the death of the affected employee. Employees and management agree that the social stigma surrounding HIV/ AIDS creates barriers to discussion over the full impact of the disease on the company.

Due to AIDS-related illness and mortality the company has some doubt as to whether or not it can expand its operations further, or undertake further investment. The consequences of such a situation are potentially disastrous for the company.

Summarising the impact of HIV/ AIDS in Transport2

Increased morbidity, mortality and ill-health retirement will ultimately place constraints on operating capability for Transport2. As the company's operating level declines along with investment it may have problems in retaining its customers and market share. The company can expect to face rising costs due to absenteeism, employee health care and funeral costs. Other costs are recruitment and training new employees. For employees lower morale and lack of security may adversely affect their productivity.

Measures taken against HIV/AIDS at Transport2

The company has an in-house anti-HIV/AIDS campaign. It is largely driven by the management and is based on education and promoting safe sexual practices. Staff is released during work time to participate in HIV/AIDS workshops and events organised and financed by the company. However both the management and staff indicate there is still a high degree of ignorance and denial. The impact of and measures taken against HIV/AIDS in the company are summarised in table 3 below. The reported impact on productivity in qualitative terms is shown in figure 11.

Table 3. Transport2 case study: HIV/AIDS Impacts according to ILO model (fig 3) (Interview data; impacts were only mentioned on drivers and driving operations).

ITEM / DIMENSION	REPORTED TREND OR TENDENCY IN COMPANY
Insurance cover	No formal arrangements. Management is considering instituting a contributory scheme Funerals mean loss of productivity and efficiency as drivers and management attend funerals
Retirement Funds	No impact detected. At present the company does not help employees prepare for normal retirement
Health and safety	Minimum standards are prescribed in legislation. In addition the transport sector has special safety regulation. There are at present no industry standards in the country. It is not possible to point to any link between HIV/ AIDS and vehicle accident rates.
Medical assistance	No impact detected yet. Company pays staff directly if they are in need of medical assistance. This is does not reflect as a direct payroll cost.
Testing and counselling	No testing conducted: counselling and or education & training minimal; condom provision at no cost. No health services provided.
Increased absenteeism	Impact noticed but not measured - cover provided by maintaining ratio drivers/trucks, overtime worked, and incentive based pay.
Declining morale	Not acknowledged by respondents as significant. Mentioned in passing by some drivers, particularly immediately after the death of a colleague.
Loss of tacit Knowledge	Death of experienced drivers replaced by trainees/inexperienced: it can take a long time to learn to use trucks efficiently. This is essential to the competitiveness and profitability of a transport operation.
Loss of skills	Less educated drivers are being replaced by more educated young school leavers. Therefore gain in skills offset by loss of tacit skills above. New drivers are more high-risk age group, however.

Increased staff turnover	Various estimates of death rate of drivers – no figures available: high turnover rate due to illness and death in the past 2 years was reported (approx. 1 death per month). In-house training costs for drivers are escalating.
Increasing demands for training and recruitment	See comments above on development of training programme in house and ratio drivers to trucks.
Declining productivity	Productivity of drivers maintained by kilometre bonus system, and training pool to maintain cover of absenteeism. The bonus is a high proportion of salary for long distance drivers. Company does not measure productivity explicitly, but they do capture staff utilisation, distance/load factor and vehicle turnaround times.
Declining reliability	Workshops/management not yet affected by HIV/AIDS losses. To date sufficient driving staff maintained by training programme, but loss of experience of drivers imposes a cost, and compromises efficiency of delivery. Reliability is a key requirement by customers. Its decline could lead to loss in customer satisfaction and resulted market share.
Declining investment	In the light of the HIV/ AIDS epidemic the company has to closely monitor its investment plans. This may mean loss of economies of scale and capacity, which affects market share if other companies are continuing to invest in capacity. Should the epidemic affect the supply of skilled workers then the viability and security of investments for further expansion may be questioned. Higher skill levels and technology increases the impact of losses due to HIV/AIDS.
Declining markets, suppliers	No impact noticed or measured.

Figure 12: Transport 2: Impact of HIV/AIDS on productivity

Activity Level	**Activity type**	**Impact**
Support	Firm infrastructure	• Future investment uncertain
	Human Resource Management	• Increased absenteeism and costs of training and recruitment. Costs funeral contributions for dead employees.
	Technology development	Acquisition of high tech uncertain
	Procurement	• No impact reported
Primary	Inbound logistics	• No impact reported
	Operations	• Considerable impact due to death of drivers and conductors
	Outbound logistics	• No impact reported
	Sales and marketing	• No impact reported
	Service	• No impact reported. Problem may arise from potential deterioration in service quality levels.

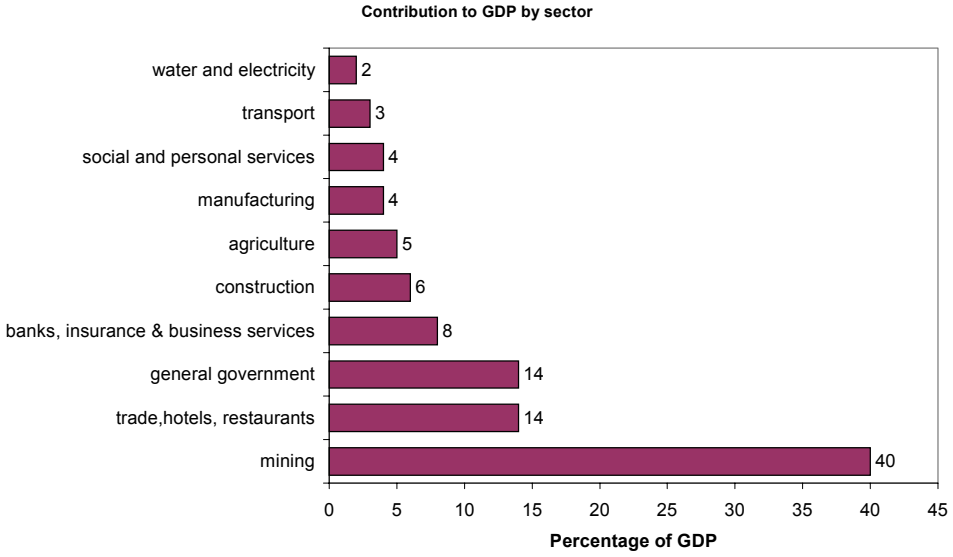
5 The Tourism company

Tourism is one of the fastest growing industries in many developing countries. In 2000 international tourist arrivals globally grew at a rate of 7.4% with respect to 1999 resulting in a total of 699 million arrivals world-wide. All regions in the world hosted more tourists, although the fastest developing region was East Asia and the Pacific Region with a growth rate of 14.7% and some 14 million more than in 1999. Receipts from international tourism climbed to US $ 476 billion, an increase of 4.5 % over the previous year. For Botswana, international eco-tourism is an important part of the national strategy to diversify the economy away from dependence on diamond production, as is evidenced by the growing importance of "trade, hotels & restaurants" in total GDP**.**

Overview of Tourism Industry

The Tourism sector plays a large role in the Botswana economy being an emerging industry whose contribution to GDP is growing. Figure 12 shows trade, hotels, restaurants as the second largest contributor to GDP (after mining) over the years 1983-1997.Total arrivals increased from 1,011,051 in 1997 to 1,152,859 in 1998. The most frequent reason for arrivals into the country was visiting, in transit to other countries or enjoying a holiday in Botswana. The majority of visitors to Botswana come from neighbouring SADC countries.

Figure 12. Botswana Average annual sectoral share of GDP (%), 1983/84 -1997/98 (constant 1993/4 prices)



The tourism sector is has been identified as containing particular risks of HIV infection for both tourists and employees in the industry, due to the psychology of tourist behaviour - many tourists associate travel with freedom from traditional social obligations and the norms which shape sexual conventions at home (HEARD; 2001).

The Tourism Sector – Susceptibility and Vulnerability to Impact of HIV/AIDS

Susceptibility

- The tourism industry hires a large number of young, single employees
- Employees are frequently mobile and away from their families for prolonged periods of time
- The prevalence of HIV may already be high within the general community
- There are frequent opportunities for sexual interaction between tourists and employees
- There is heavy use of recreational drugs and alcohol by tourists and employees, which threatens safe sexual behaviours.

Vulnerability

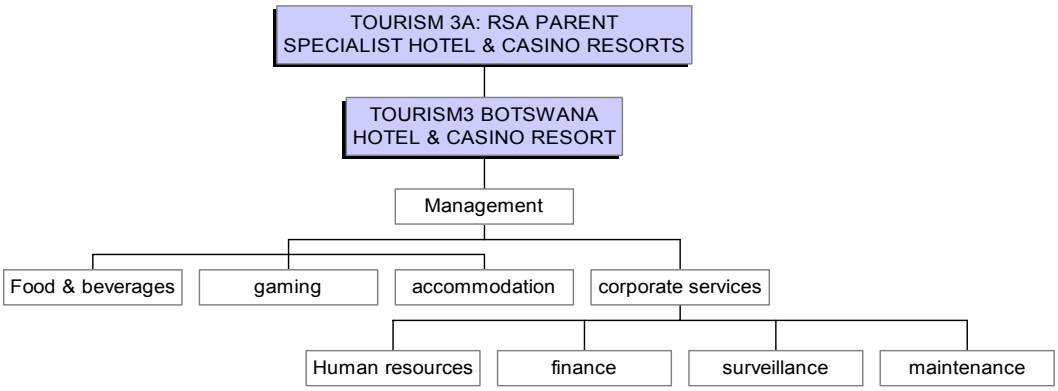
- Key employees that are skilled and difficult to replace
- The profitability of the industry is highly variable and seasonal
- Employers spend significant resources training new employees
- The industry is highly labour intensive
- ? Clients avoiding tourism destinations where HIV/AIDS is known to be very prevalent in the local population?
- Certain aspects of the industry may be affected by the increasing proportion of household expenditure that goes to health expenses, away from "luxury" expenditures (e.g. gambling, holidays).

Tourism3: Company background

Tourism3 is a relatively new operation, wholly owned and operated by a parent company in RSA, which is a specialist hotel and casino resort company. Tourism3 is operating in the top end of the business hotel market offering luxury accommodation, business facilities, recreational facilities and other services.

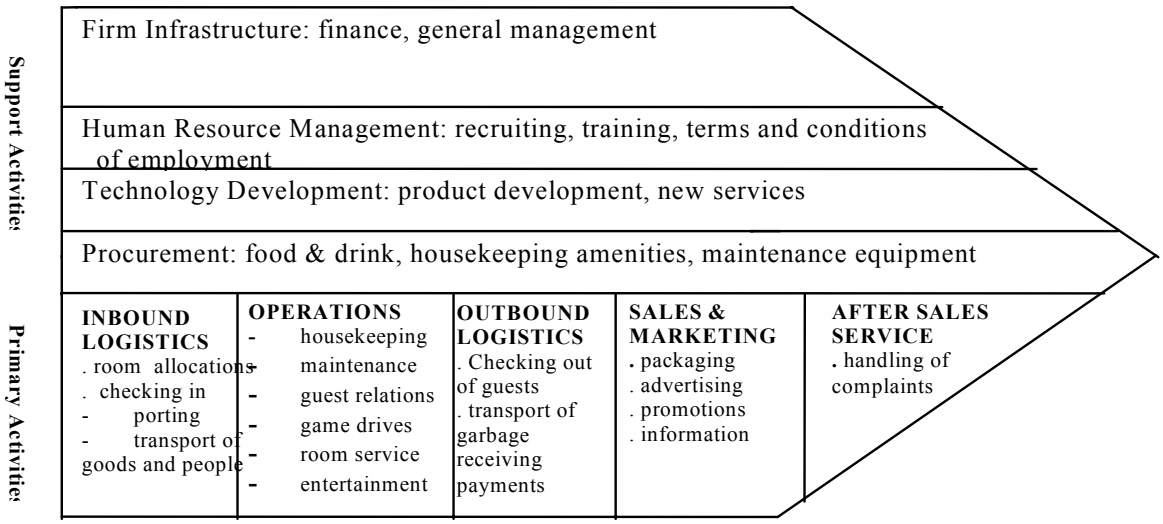
Tourism3 has 322 permanent staff and approximately 120 temporary/casual staff. The staff is approximately 70% female and the age profile of the employees is predominately in the 25 - 35 age group. Turnover is highest in the age range of 19 - 29.

Figure 14. Organisational Chart for Tourism3 case study.



The value chain, and some notes on each item in the chain are shown in figure 14:

Figure15. The Value Chain for Tourism3 case study.



Support Activities

Infrastructure

This includes finance and general management.

Human Resource Management

This is performed by the personnel manager and deals mainly with the recruitment and training of staff for the organisation. Other activities include administration, and responsibility for staff welfare.

Technology Development

This deals with product development and is performed by the parent company in RSA

Procurement

Procurement involves purchasing food and beverages, housekeeping amenities, and maintenance equipment and spares.

Primary Activities

Inbound Logistics

These activities are performed by the front office function, which deals mainly with room allocations, checking-in guests and maintaining guest folios. Other activities include reservations, reception, portaging, warehousing, and the transport of goods and transfers of guests.

Operations

Activities in this category include housekeeping, maintenance, preparation of food and drinks, guest relations, gaming room service. Additional activities (outsourced) are hairdressing, entertainment and selling jewellery and curios.

Outbound Logistics

Activities falling under outbound logistics at Tourism are the checking-out of guests, receipt of payments, transfers of guests and the transport of garbage.

Sales and marketing

These activities are performed by tour operators, travel agents, the general management office, the Department of Tourism, the Group and the Hotel and Tourism Association of Botswana (HATAB), who are associated with packaging, selling and advertising the hotel outside Botswana. Activities also include dissemination of information, promoting Botswana externally, as well as promoting the tourism industry within Botswana.

Service

This includes handling customer complaints, maintenance of quality of service and transferring customer feedback.

Externals

Environment

This basically refers to the surroundings within which Tourism operates or functions. The external environment includes the national parks, the business within which the hotel functions, the community and the Department of Tourism. Generally it encompasses factors such as the influence of public sector policies, geographical location, the business environment, as well as the influence of social and political factors.

Impact of HIV/AIDS on Tourism3

Medical Costs

Employees at Tourism3 belong to a private medical aid scheme. The employee and the company contribute equally to the scheme. The contribution depends on levels of income and number of dependents. Tourism3 pays 50% of the employees' contribution and the employee the other 50%. Temporary/casual staff in the lower grades are not covered by this scheme. The only possible impact on medical costs is in the future if the medical aid scheme increases premiums due to the number of HIV/AIDS patients claiming from the scheme.

Operations

Tourism3 does capture records of its absenteeism. An employee can take sick leave if they produce a doctor's certificate. Employees are entitled to 14 days paid sick leave or 30 days with hospitalisation. If the employee exhausts these sick leave days s/he must then take annual leave of which they are entitled 24 days annually. There was only one reported case of an employee who exhausted sick leave and annual leave and was laid off at 75% salary.

In terms of the impact of HIV/AIDS on the operations of the company, there are no reported disruptions on the operations of the company, and the large pool of temporary /casual trained employees offsets any effects such as labour shortage and flexibility, especially in the lower levels of staff.

Table 4: The impact of HIV/AIDS on Tourism3

ACTIVITIES	**RESULTS/IMPACT**
SUPPORT ACTIVITIES	
FIRM INFRASTRUCTURE	No impact reported
HUMAN RESOURCE MANAGEMENT	No impact reported
TECHNOLOGY DEVELOPMENT	No impact reported
PROCUREMENT	No impact reported
PRIMARY ACTIVITIES	
INBOUND LOGISTICS	No impact reported
OPERATIONS	No impact reported
OUTBOUND LOGISTICS	No impact reported
MARKETING SALES & SERVICE	No impact reported

Measures taken against HIV/AIDS

Risk Reduction

In 1999 an HIV/AIDS committee was formed in Tourism3 which directly reports to the General Manager through the Human Resources Department. The committee was formed through staff volunteers. The main purpose of the committee was education. But the committee was never really effective due to low participation rates and now basically does not meet at all. There is a Health and Safety Officer who carries out peer education on HIV/AIDS and distributes condoms.

Risk Mitigation

Due to the fact that no HIV/AIDS cases have been reported, the management of Tourism3 has not formulated any plans to mitigate against the effects of the disease, apart from the the extensive use of casual/temporary labour. Table 4 summarises the overall impact of HIV/AIDS in the enterprise.

Table 5. Tourism 3 case study: HIV/AIDS Impact (according to ILO model fig.3)(interview data)

ITEM / DIMENSION	REPORTED TREND OR TENDANCY IN TOURISM
Life Insurance cover	No effects yet with insurance premiums stable – effects will be mitigated by exclusion of large number of temporary/casual staff in lower grades
Retirement Funds	No impact detected – the extensive use of casual labour reduces the proportion of staff entitled to participate in social security benefits.
Health and safety	No significant increase in incidence of illness reported.
Medical assistance	No impact detected yet. Company pays 50% of compulsory medical aid contributions. There is no company medical staff. Large temporary/casual pool not covered by medical scheme.
Testing and counselling	No testing conducted. Condom provision at no cost. Counselling provided by external NGOs at the invitation of the company.
Increased absenteeism	No impact noticed.
Declining morale	Not acknowledged by respondents as significant
Loss of tacit knowledge	None reported. The casual pool of trained people at lower skills levels retains the necessary skill level.
Loss of skills	No impact detected; turnover dealt with by a pool of casually employed staff in the lower, menial skill levels
Increased staff turnover	Turnover figures reported by the company are not noticeably increasing - any such effect could be hidden by the significant use of casual labour
Increasing demands for training and recruitment	No increased demands for training and recruitment
Declining productivity	No impact.
Declining reliability	No reports of reliability problems
Declining investment	There are no reported plans to decrease investment.
Declining markets, suppliers	No impact noticed or measured. Tourism continues to increase as % of GDP in Botswana; there is scope for the sector to grow even larger.

6 The Media Company

Company background

Media4 is a newspaper with approximately 45 employees comprising photographers, graphic designers, reporters, editors, advertising staff, circulation or distribution staff, part-time drivers, administration staff, finance staff and management. Media4 has a monthly turnover of roughly P1,2 million of which about 80% is income generated from advertising and the remainder from newspaper sales, subscriptions and others.

Media4 produces two weekly newspapers with a weekly circulation of roughly 27' 000 and 14'000 respectively. The company distributes its newspapers through outlets located in various parts of the country and also uses street vendors (figure 15).

The newspaper industry in Botswana has a small potential market and is dominated by three major players (of which Media4 is one) who possess the largest portion of the industry's market share. A few other newspaper companies in the industry compete for a small portion of market share in the business. The 3 major newspaper companies produce weekly publications with an average circulation in the region of 20'000. The industry generates much of its revenue from advertising (approximately 80% of total revenue). Circulation of newspapers in the industry has been levelling off and this has been mainly attributed to competition from the Internet, new radio stations and the national television station. Distribution of publications is mainly outsourced to vendors and supermarkets. Production and printing of publications are also outsourced to local and South African providers, although Media4 will soon set up an in-house printing facility.

The Industrial Relations Environment in Media4

Media4 has a staff welfare committee whose main responsibility is to work with management on staff wages and working conditions. This committee is not unionised and only represents staff on work-related issues. At industry level, most of the workers do not belong to a union which would represent them. This however is typical of manufacturing and service companies in Botswana whose workforce participates minimally in union activities.

Figure 16. Media4 case study organisational structure

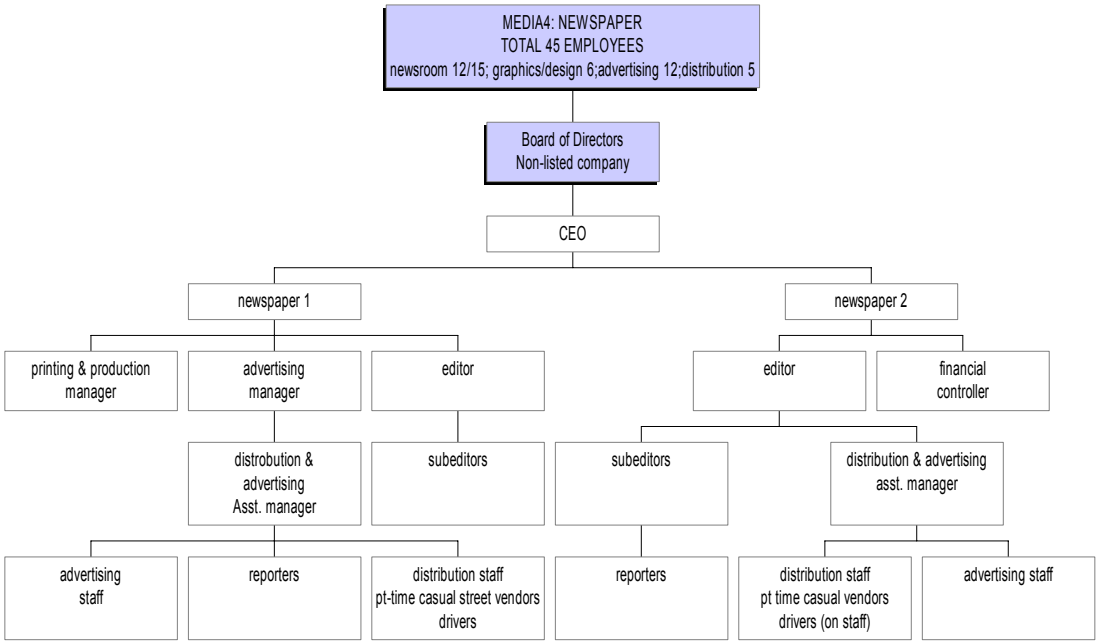
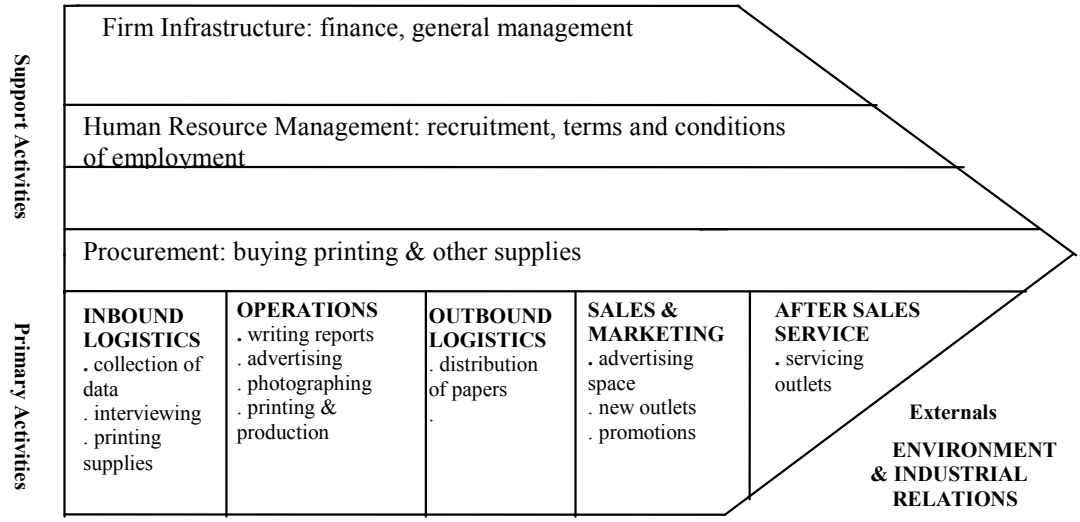


Figure 17: Media4's Value Chain



Primary activities of the company are activities involved in the physical creation of the two newspapers and its sale and transfer to the different consumers as well as after-sales service. Printing and production of the newspapers are currently outsourced. However, Media4 has decided to move this to in-house, and has bought an expensive imported state-of-the-art web printing press. This is a cutting edge technology capable of large-scale capacity, and requiring highly skilled artisan labour to operate it, and a number of highly trained auxiliary employees. Media4 made attempts to interest its competitors to cooperate over the joint utilisation of the press, but were unsuccessful, which places further pressure on capacity utilisation of the new press. The highly skilled printing staff required for a web press will be sourced from ex-patriate labour. Newspaper reporting is largely carried out by the company's reporters but freelance work is also published in the newspapers.

Other activities that are outsourced include distribution and selling of the newspapers to the outlets and street vendors located all over the country. Distribution in Gaborone and other places within reach is carried out by the company's part-time drivers. Most of the primary activities are otherwise performed in-house.

Support activities that are outsourced include production of the company's financial reports, training of personnel, procurement of printing paper (figure 16).

Impact of HIV/AIDS on Media4

As far as impact of HIV/AIDS on Media4 is concerned, most of the interviewees highlighted the case in which one of the employees (Media4's acting financial controller) died as a result of HIV/AIDS sometime in February 2001. No other cases were reported.

Direct costs

Media does not have a company life insurance scheme from which employees receive benefits such as funeral costs and other benefits which may be due to the deceased employee's family. The company however has a medical aid scheme with BOMAID (Botswana Medical Aid Society). Employees contribute half of the monthly premium and Media4 contributes the other half. The monthly contribution per employee ranges from P171 to P 408 for the year 2001. The total medical aid contribution was P 7'439 per month and the yearly amount was P 59'748. The company does not incur any medical and hospitalisation expenses for employees and also does not provide anti-retroviral drugs to HIV/AIDS infected employees.

According to most interviewees, there has not been a significant decline in productivity as a result of HIV/AIDS. In addition, absenteeism due to HIV/AIDS related sickness has not shown any substantial increase as a consequence of HIV/AIDS. This however could be attributed to the fact that there is no proper and reliable system that is used to record absenteeism. Furthermore, employees have always been reluctant to disclose diseases that they suffer from when taking sick leave or when absent from duty. The data provided by the company shows that the number of person-days taken as sick leave has been increasing a great deal over the past 3 years; in 1998 it was approximately 4, in 1999 it was 12, and in 2000 it was 36. According to some of the interviewees, Botswana is at a stage where the high prevalence rates have not yet been fully translated into high mortality rates such that companies have not yet experienced the impact resulting from HIV/AIDS. They however believed that HIV/AIDS impact is most likely to increase in the future and this would result in an increase in direct costs.

DEATH (2001) OF FINANCIAL OFFICER OF MEDIA4 ATTRIBUTED TO HIV/AIDS

In terms of absenteeism, this particular employee's number of sick leave days increased as her health worsened and reportedly spent more time on sick leave than at work. In her final year of life, she worked very little, although she continued to be paid her salary by the company. As a result, her work was allocated to other employees and her other responsibilities were outsourced to a part-time chartered accountant. The company contributed P1200 towards funeral expenses. The company also assisted in providing employees with transport to attend the funeral. Prior to her death, the company had reportedly bought her a ticket for P 10'000 to Nigeria to seek help from a spiritual healer and loans were advanced for the employee's medical expenses.

The lost employee was a qualified accountant, who was a very long-standing employee, and head of the finance department. The loss of this employee contributed to a serious reduction in the finance department's output, and the degree of control exercised by Media4 over its financial situation. Financial year results in 2001 were not released on time, and other financial statements were delayed. This resulted in increased auditing time and thus increased auditing costs. There was also a reported increase in debtors' balance. The company hired a chartered accountant to do some of the work that was done by the said employee and this had to be done at a higher rate of pay than previously, and hence involved an increase in labour costs. Media4 has not yet replaced the said employee, and has been looking for someone for several months now. It is thought that it may be necessary to buy in these skills from expatriates, which could involve more expense and a considerably higher wage to attract the right person The replacement of the lost Financial Director is particularly urgent as the current backlog in financial administrative work is exacerbated with the process of opening the in-house printing department, a large operational departure for Media, involving large capital investment and hiring of quite a few new staff; all of this requires good financial control systems, but these are lacking due to one case of HIV/AIDS.

Indirect costs

It is not possible at this point in time to quantify absenteeism due to attending funerals and taking care of sick relatives. This is because most funerals in Botswana are mainly held on weekends (Saturdays and Sundays) when some employees are not at work. There is also no evidence of employees taking leave to look after sick relatives. The data provided by Media4 shows that compassionate leave in terms of person-days has declined from 12 in 1998 to 4 in 2000, whilst there has been a strong increase in sick leave.

In general, the company had not yet experienced any significant increase in turnover and replacements due to the fact that HIV/AIDS related mortality is still low.

Media4's response to HIV/AIDS

Risk reduction

At the moment, Media4 has no HIV/AIDS policy and management have not done much in terms of raising the level of awareness, educating, counselling and training the workforce on HIV/AIDS issues. The managing editor and the one of the editors acknowledged that there had been a lack of leadership on the issue of HIV/AIDS, which it was intended would be remedied. Interestingly, this is despite the fact that the company ran a column on HIV/AIDS in partnership with another company in the two newspapers. One of the reasons given by one senior interviewee for the lack of progress over the HIV/AIDS question in the company is that there is a strong evangelical Christian ethos and following amongst staff at all levels in the company which stresses adherence to biblical values as the appropriate response to HIV. However, Media4 has run a series of weekly feature articles on the issue of HIV/AIDS in Botswana, and the Managing Director himself expressed the view that he had been waiting for the staff association to take a lead on the issue, but that this was not really happening. Therefore, he had realised that it was necessary for him to "lead from the top". Leadership rather than ideology seems to be a critical factor.

Risk mitigation

Due to the low number of HIV/AIDS cases reported, the company has not done much in terms of reducing the impact of the disease. The company has not made any plans to train more people, recruit more employees, to relocate their activities or made any decision which would systematically reduce the HIV/AIDS impact.

In summary, the employees interviewed felt that the company should start by networking with organisations involved in HIV/AIDS related issues. In addition, management felt that the Media4 in general must encourage an open discussion about it. Raising the level of awareness and educating employees on HIV/AIDS are key activities that Media4 could start with, if they were to appropriately address the HIV/AIDS problem. The interviewees believed that impact of HIV/AIDS on Media4 is likely to increase in the future when mortality rates increase.

Table 5 summarises the impacts of HIV/AIDS on Media4, and figure 17 summarises the reported impact on productivity & efficiency in the value chain.

Table 6. Media4 case study: HIV/AIDS Impacts (according to ILO model fig 3.) (interview data)

ITEM / DIMENSION	REPORTED TREND OR TENDENCY IN MEDIA4
Insurance cover	Company has no life insurance policy and therefore no impact has been detected.
Retirement Funds	No impact detected. Company does not have a pension scheme. All staff are on Provident Fund, which does not provide death benefits or dependants' benefit after death.
Health and safety	No impact detected as the company has no programme on Health and Safety.
Medical assistance	No impact detected yet. Company pays 50% of medical aid contributions - all staff are members. No HIV/AIDS treatment costs and company does not provide anti-retroviral drugs. No company medical staff.
Testing and counselling	No testing and counselling conducted by the company: Raising awareness, training and education & training provided have been minimal; There has been occasional condom provision at no cost by volunteers mainly company employees acting on their own initiative.
Increased absenteeism	Sick leave partially recorded as increasingly rapidly in the late 1990's, but but could not be directly linked to HIV/AIDS. It could for instance be an increase in employees (especially women) who are taking time off to attend to . sick relatives with HIV/AIDS opportunistic infections. Only one case where a senior employee was absent for a long time from work due to HIV/AIDS related sickness.
Declining morale	No impact detected, as company has not experienced higher death rates associated with HIV/AIDS.
Loss of tacit knowledge	To date, only one highly qualified employee lost due to HIV/AIDS. However, this led to a massive loss of accumulated knowledge.
Loss of skills	Loss of one of the most qualified employees from HIV/AIDS led the company to outsource some of the duties previously performed by the said employee.
Increased staff turnover	No reported significant increases on staff turnover .
Increasing demands for training and recruitment	Company has so far only experienced one high-profile HIV/AIDS death knowingly. Full replacement may require hiring an ex-patriate (the company has been improvising with outsourcing financial control for several months using a consultant). However, long-term replacement has proved difficult and slow because of the high level of skill and experience required – the wage offered will have to be doubled.
Declining productivity	Financial control over the company is compromised at the very moment of moving into an expensive high-tech investment.
Declining reliability	No impact noticed, except in the financial department. Newspaper deadlines are still met.
Declining investment	No impact noticed. In fact, the projected in-house printing facility is a considerable new investment by the company, both in equipment and staff.
Declining markets, suppliers	No impact noticed or measured. Declining readership of the publications could have been a result of the internet and the recent opening of the national television station.

Figure 18. MEDIA4 Impact of HIV/Aids on productivity and efficiency

Support Activities		**Results/Impact**
	Firm infrastructure	• One highly qualified employee lost impacting on activities of the financial control function
	Human Resource Management	• No impact reported
	Technology development	• No impact reported
	Procurement	No impact reported
Primary Activities		
	Inbound logistics	• No impact reported
	Operations	• No impact reported
	Outbound logistics	• No impact reported
	Sales and marketing	• No impact reported
	Service	• No impact reported

7 Conclusions and recommendations for enterprises

This research has been limited by the lack of diversity of cases across industrial sectors, that is the scope of coverage, and the lack of reliable and detailed numerical data that could help to verify the perceptions of those interviewed. However, the research was able to pinpoint differences in susceptibility to HIV infection amongst staff, and vulnerability of the organisation as a whole to the effects of HIV/AIDS. The four companies' susceptibility and vulnerability is shown in figure 18 as a matrix with two axes. The bottom left-hand quadrant is the most desirable position, with low susceptibility and vulnerability. The transport companies were decidedly more susceptible and vulnerable than the other two. The tourism enterprise, although susceptible, was less vulnerable because of the large-scale employment of casual labour, and the lower general skill level. The media company seemed less susceptible but more vulnerable because of its high skill levels and the general skills shortage at this level.

Figure 19. Susceptibility and vulnerability to HIV/AIDS amongst the 4 enterprises

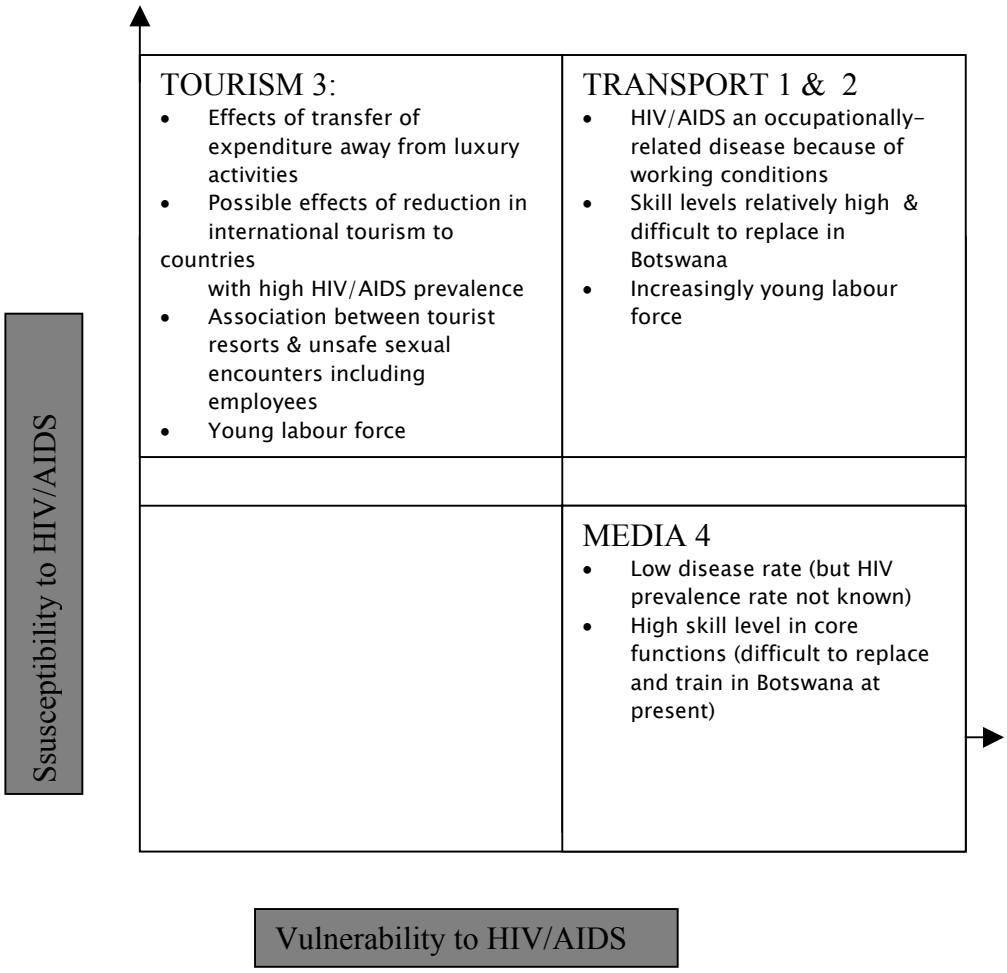


Table 6 compares the four enterprises in terms of the costs and productivity affects ascribed by interviewees to HIV/AIDS (with reference to the ILO model in fig.3). Again, the transport companies demonstrate the most far-reaching effects to date. None of them indicated that these costs and productivity losses in any way threatened their existence, although top management in one of the transport companies suggested that HIV/AIDS might compromise the likelihood of further investment in the company.

Table 7. Comparison of the cost and productivity effects of HIV/AIDS in the 4 enterprises

Impact	Transport1	Transport2	Tourism3	Media4
INCREASED COSTS				
Life insurance cover	YES	NO (no group scheme)	NO (40% staff – casuals - not covered)	NO (no group scheme)
Retirement/provident funds	NO (operating staff only on provident fund)	NO (no group scheme)	NO (40% not covered by any scheme)	NO (provident fund only)
Health and safety	YES Significant death toll from HIV/AIDS; ? Effect on road safety)	YES Very significant death toll HIV/AIDS; ? road safety effects?	NO	NO - only 1 death
Medical assistance	NO – health scheme premium rising however	NO – no medical scheme	NO – 40% not covered:	NO
Testing and counselling	NO	NO	NO	NO
Funeral costs	YES – significant impact	YES – significant impact	NO	NO
DECLINING PRODUCTIVITY				
Absenteeism	YES (though not measured)	YES (though not measured)	NO – covered by casual pool	NO (though single case very high absenteeism cost)
Declining morale	? not recognised	? not recognised	NO	NO
Loss of tacit knowledge	YES	YES	NO	YES (loss of long-service key employee)
Loss of skills	YES	YES	NO	YES – financial function
Increased staff	YES	YES	Casual pool large to cover	NO
Increased demands for training	YES	YES	NO	NO
Declining investment	NO	? YES	NO	NO
MARKET CHANGE	NO	NO	NO	NO

None of the companies had taken comprehensive measures against HIV/AIDS as organisations. Efforts to date were uncoordinated, not comprehensive, and not capable of integrating "health promotion" initiatives with a holistic approach to prevention and treatment of HIV/AIDS related illnesses (table 7).

Table 8: Lack of measures taken by the 4 enterprises against HIV/AIDS

Preventive measures / Best Practice	**Transport1**	**Transport2**	**Tourism3**	**Media4**
Company policy on HIV/AIDS widely canvassed, consulted and approved	NO	NO	NO	NO
Voluntary testing and counselling program	NO	NO	NO	NO
Well-resourced & comprehensive peer education program for staff	NO	NO	NO	NO
Extension of education and training to CSW's and community	NO	NO	NO	NO
Provision of reproductive health services and referrals, including diagnosis of STI's.	NO	NO	NO	NO
Provision of anti-retroviral therapies to staff	NO	NO	NO	NO
Extension of anti-retrovirals to CSW's and dependants of staff	NO	NO	NO	NO
Links to NGO's active on HIV/AIDS	NO	NO	NO	NO
Links to state agencies & services (e.g. health services) on HIV/AIDS	NO	NO	NO	NO

In a country which currently has probably the highest recorded HIV prevalence rate in the world, this is clearly a lamentable state of affairs, caused by a number of factors which can be differentiated between generic factors (common to all four enterprises) and particular factors (which are present in only one or some of them):

Generic Factors

None of the companies have ways of accurately tracking the effects of HIV/AIDS on their workforce or their markets, and therefore on their survival prospects as the pandemic progresses. Since HIV/AIDS is therefore an unknown factor in the enterprise, there is not a strong focus on taking any action against it.

None of the companies have collective bargaining arrangements in which employees have credible representation which extends outside of the immediate enterprise to the industry as a whole. There is therefore an absence of organised pressure from workforces on employers to improve their social security at work in ways that can benefit people living with AIDS amongst the workforce. Collective bargaining and industry organisation can be key factors for concerted and comprehensive preventive efforts against HIV/AIDS. Neither are employers organised so they cannot gain from economies of scale and synergies which serious action against the disease could mobilise in an organised industry. Until collective bargaining is established in Botswana as the norm then, the only alternative is strong leadership of, and networking between, firms to deal with the threats that HIV/AIDS poses to them.

Particular factors in the enterprises

- In labour intensive, relatively low-skill enterprises (such as Tourism3) the enterprise can insulate itself against the costs of employee benefits resulting from HIV/AIDS by using casual labour, which is easily trained, and extremely flexible.
- In Transport1 and to a lesser extent in Transport2, the high losses of skills of drivers are met by in-house training. However, the costs of this strategy are increasing as the number of drivers contracting HIV increases.
- In Media4 the rate of infection of staff with HIV seems to have been low, and so the impacts have been negligible in terms of the proportion of the workforce affected to date. (However, the company has no way of knowing what current infection rates are, and whether it is due for an increase in the numbers of people affected in the future).
- In Transport1 and Tourism3, the enterprises are owned by RSA companies; major decisions such as a decision to undertake a comprehensive response to HIV/AIDS cannot be taken solely by the Botswana subsidiary, which introduces an element of complication into the process of decision-making.

Recommendations to enterprises

These recommendations follow naturally from table 7. The companies are recommended to undertake the following measures in the most appropriate ways for their own circumstances:

- Each enterprise needs a company policy on HIV/AIDS, which should be widely canvassed, consulted and approved.
- Companies should start a voluntary HIV testing and counselling program; if this cannot be provided by the company in company time, employees should be given detailed advice about state health facilities available for this, and there should be visible and regular promotion material encouraging them to take advantage of them.
- Companies need a well-resourced & comprehensive peer education program for staff. This means a continuous training programme for peer educators in sufficient numbers to regularly meet and discuss with all staff in the company. This programme should be extended outwards from the company to commercial sex workers and the employees' communities.
- Companies should provide of reproductive health services and referrals where appropriate, including diagnosis of STI’s. Where appropriate (for example in the case of the long-distance drivers) this should be available to commercial sex workers at "hot spots", and members of the employees' communities.
- Provision of anti-retroviral (ARV) therapies to staff wherever possible; if this is not possible companies should provide referral services for people living with AIDS to obtain ARV's when these are available from state health sources, and promote these services in the workplace. Companies should discuss medical aid cover for HIV/AIDS on an industry basis, and actively negotiate with medical aid companies for the costs of ARV to be provided by medical aid schemes which cover employees and their dependents.
- Companies should develop links with experienced NGO's who can assist them in least-cost and efficient ways of implementing these recommendations.
- Companies should maintain active links with state agencies & services (e.g. health services) on HIV/AIDS.

Recommendations to BNPC

The main recommendation from this study to BNPC is that it should incorporate an intervention against HIV/AIDS targeted at private sector companies, based on the following aims and objectives:

1. To promote the idea that improvements in companies' responses to HIV/AIDS will also improve productivity
2. To ensure that companies understand that effective responses to HIV/AIDS must involve and have the strong support of all stakeholders in the enterprise, from the top downwards
3. To promote the idea that a company-wide comprehensive policy on HIV/AIDS, widely consulted, and if possible, negotiated, within the enterprise at all levels is a good way to begin enterprise programs
4. To promote the idea that both productivity improvement and HIV/AIDS interventions at enterprise level require knowledge based on consistent and accurate information on key parameters relating to costs and work processes
5. To make sure that companies are aware of best practices in HIV/AIDS interventions, and of the reasons why some programs are more successful than others
6. To promote partnerships between foreign-based parent companies and Botswana subsidiaries in the fight against the impact of HIV/AIDS on companies

Finally, it is recommended that this study be followed up with a more comprehensive study looking at a wider range of enterprises. Perhaps further studies could also investigate particular aspects in greater depth (such as medical aid and social security provision, peer education and training programmes, linkages with foreign firms who have developed resources on HIV/AIDS).

Appendix 1 Fieldwork hypothesis & interview guides

DIRECT IMPACT OF HIV/AIDS ON THE COMPANY

Low Productivity

Hypotheses:

H.1 HIV/AIDS reduces the productivity of the employee who is affected, in particular when this person has developed full-blown AIDS.

H.2 It also has an impact on the productivity of others who interact with the affected employee, such as team members or subordinates. This impact may be positive or negative.

Questions:

Q.1 Have you noticed any change in productivity?

Q.2 Is there anything that makes you think that productivity change is related to HIV/AIDS prevalence within the company?

Q.3 Other factors affecting productivity than HIV/AIDS?

Q.4 How is it possible to state that declining productivity is related to HIV/AIDS?

Q.5 Do you know if any of the employees are HIV positive?

Q.6 Have you noticed any changes in productivity amongst the workers whom you know are HIV positive?

Q.7 What are the effects on other workers (e.g. work-team productivity)?

Q.8 Do you think that, in 12 months from now, HIV/AIDS will have reduced your productivity?

Care

Medicine

Hypotheses: HIV/AIDS increases the company expenses for medicine that is provided to the infected workers

Questions:

Q.1 Does the company provide ARV medicine to the employees?

Q.2 Does the company reimburse employees for buying ARV medicine?

Q.3 Does the company provide medicine for opportunistic infections (e.g. TB) to the employees?

Q.4 Does the company reimburse employees for buying opportunistic infections (e.g. TB) medicine?

HIV/AIDS-related additional staff and equipment

Hypotheses: HIV/AIDS increases the company costs of hiring additional medical staff

Questions: Has the company recruited additional medical staff (and equipment) to cope with HIV/AIDS or HIV/AIDS-related infections within the company?

Hospitalization

Hypotheses: HIV/AIDS increases the company costs for covering or contributing to workers hospitalisation expenses

Questions:

Q.1 Does the company contribute to the costs of hospitalisation of HIV/AIDS infected workers?

Community-based care

Hypotheses: HIV/AIDS increases the company costs for contributing to workers hospitalisation expenses

Questions:

Q.1 Does the company contribute to the community-based care of HIV/AIDS sufferers in general?
Q.2 Does the company contribute to the community-based care of HIV/AIDS sufferers who are ex-employees?

Disability and Retirement Pensions

Hypotheses: HIV/AIDS increases the company costs of disability pension provided to workers who were dismissed or had to leave their job

Questions:

Q.1 Are the employees covered by disability pension when they loose or leave their job due to the HIV/AIDS infection? Amount and calculation?
Q.2 If any, which category and to what extent?
Q.3 Have you recorded an increase in the number and the amount of disability pension paid out?
Q.4 Are there more early retirement due to the HIV/AIDS pandemic
Q.5 Has there been any structural changes to the company pension scheme in the last five years (e.g. defined benefit scheme to defined contribution scheme)?

Sick-leave

Hypotheses:

H.1 HIV/AIDS increases the number of lost days for sick-leave
H.2 The increased number of lost days and its cost leads the company to reorganise the work processes and/or to adjust economic activity

Questions:

Q.1 Number of lost days / unit time?
Q.2 Among the total number of lost days, how many (or what percentage) can be attributed to HIV/AIDS infection?
Q.3 What is the maximum number of days of sick leave in a unit time?
Q.4 How does the company cover for usual sick leave?
Q.5 Have you done anything unusual to cope with any increase in sick leave?
- Compensatory overtime by others?

- Overtime by the absentee on return?
- Temporary workers?
- Reassignment of workers?
- Cutting-down activity?
- Other measures to reorganise work or to adjust economic activity?

Death of the employee

Hypotheses: HIV/AIDS increases the company costs for contributing to the expenses related to the death of an employee

Questions:

Q.1 Does the company contribute to the transportation (body, relatives) expenses?
Q.2 Does the company contribute to the ceremony attendance expenses?
Q.3 Does the company contribute to the burial (coffin, tombstone, flowers, etc.)
Q.4 Does the company provide a lump sum to the relatives of a worker who died?

INDIRECT IMPACT ON THE COMPANY

Turn-over and Replacement Costs

Hypotheses:

H.1 HIV/AIDS increases turn-over
H.2 It also increases replacement costs

Questions:

Q.1 What is the turn-over baseline?
Q.2 Is it possible to separate, account or estimate HIV/AIDS-related turn-over?
Q.3 Is the HIV/AIDS-related turn-over more unpredictable than usual turn-over?
Q.4 If yes, how do you cope with this?
Q.5 For HIV/AIDS affected people is it particularly difficult to make the decision to:
  a. dismiss the employee?
  b. start looking for replacement for particular people who are affected?
Q.6 Has HIV/AIDS led to an increase in the workload for recruiting (e.g additional staff)?
Q.7 Is there an increase in the workload and costs for training (on-job training and off-job training) new staff because of HIV/AIDS,
  a. to get staff qualified?
  b. to get staff fully productive?
  c. to get staff to assist with on-the-job training of replacement?

Loss of skills

Hypotheses:

H.1 HIV/AIDS increases losses of skills in the enterprise, as turnover increases.
H.2 This is due to problems related to skills transfer from AIDS-sick employees to their replacements – such skill transfer will be difficult under normal circumstances, but becomes virtually impossible from an AIDS-sick employee.

Questions:

Q.1 Which skills are needed for performing different jobs in the enterprise? (Do not attempt to perform a full Human-Capital audit here, just get an overview related to the value chain.) Identify high-skill jobs.
Q.2 In what way are these necessary skills built? (Does the company hire workers on a certain educational level, or with specific experience? Does it educate or train workers for these positions?)
Q.3 To what extent is it important that skills are transferred from an employee who is leaving, to the replacement? How is this organized?
Q.4 Are there any cases of high-skilled employees leaving the company abruptly (because of illness or death)? How did the skills transfer work in this case?

Temporary Absence for Care and Funerals

Hypotheses:

H.1 HIV/AIDS increases temporary absence for care and funerals
H.2 The increased number of lost days and output leads the company to change its policy/regulations or/and to reorganise the work processes

Questions:

Q.1 Has there been an increase of HIV/AIDS-related temporary absence for care and funerals?
Q.2 Is it possible to account or to estimate HIV/AIDS-related absence for care and funerals (e.g. number of days)?
Q.3 Is it possible to account or to estimate the cost in terms of lost output due to HIV/AIDS-related absence for care and funerals?
Q.4 What is the HIV/AIDS policy/regulation for other workers in case of hospitalisation or funeral (e.g. number of days permitted to attend funerals)?
Q.5 Has the company changed its policy/regulation?
Q.6 Has the company taken any specific measure to cope with the HIV/AIDS-related absence for care and funerals (such as measures to cope with the sick-leave issue)?

Declining Morale

Hypotheses:

H1: Due to its high prevalence and fatal consequence, HIV/AIDS has a specific impact on the workers morale and the workplace atmosphere
H2: This has an impact on the productivity of workers

Questions:

Q.1 Is there any sign of declining morale amongst workers and at the workplace such as,
   a. individuals isolating from other employees?
   b. increasing inter-personal conflicts?
   c. lack of co-operation between people?
   d. reduced ability of individuals and teams to solve problems?
Q.2 Do these signs have an impact on the productivity?

INDIRECT IMPACT OF EXTERNAL FACTORS

Output, market and demand

Hypotheses:

H.1 There will be a fall in aggregate domestic demand due to HIV/AIDS in the economy at large, relative to what it would have been.
H.2 HIV/AIDS is associated in Botswana with a switch in household expenditure patterns away from certain goods and services towards health care expenditure.
H.3 This fall or change in demand patterns has had a negative impact on the domestic demand for any company's products and services.
H.4 Enterprises producing health services have experienced an increase in demand.
H.5 The company expects to experience an increasing impact on demand in the direction identified

Questions:

Q.1 The first two hypotheses should be evaluated on the basis of national statistics, as we believe that the Botswana CSO publishes both national accounts and household expenditure and consumption surveys.
Q.2 Look at turnover figs, and price levels. (These may be from written sources.)
Q.3 Are you experiencing a change in demand at present?
Q.4 What do you think are the reasons for this? (Are they related at all to HIV/AIDS?)
Q.5 Do you expect this change in demand to be reversed or increased in the coming year?

Output (downstream inter-action); Hypotheses

H.1 The company is experiencing some degree of disorganisation amongst intermediate companies who buy its products or services either to use them in further value addition, or for resale.
H.2 This is negatively affecting the amount of products or services the company can bring to market

Questions

Q.1 Who are you working with to get your products to market?
Q.2 Do you have a contract with these enterprises/individuals? (type of interaction and degree of integration)
Q.3 How has this relationship evolved in the past two years? Are there any problems emerging?
Q.4 If there are problems what are you doing, or do you intend to do about them?

Labour supply - Has it become harder to recruit staff than it used to be?

Hypotheses:

H.1 The shortage of skills is an endemic problem in Botswana
H.2 Supply of skilled labour to the company is becoming increasingly scarce as a consequence of the HIV/AIDS pandemic
H.3 The impact of HIV/AIDS is strong enough to counter the effect of current government and private sector initiatives to increase the supply of skills to enterprises.

Questions

Q.1 Is it difficult for the company to get skilled labour?
Q.2 If yes, has this problem increased over the past 2 years?
Q.3 what is the company doing about ensuring a skilled labour supply in the future?
Q.4 does the company have formal links with government education and training institutions with a view to acquiring skilled Batswana?
Q.5 Do you think that the present national efforts to upgrade the skills of Batswana are helping the company to acquire skilled labour, despite HIV/AIDs?

Raw material and other supply

Hypotheses:

H.1 The company is experiencing some degree of disorganisation amongst supplying companies who provide its raw materials and intermediate products as well as business services
H.2 This is negatively affecting the amount of products or services the company can bring to market

Questions

Q.1 Who are you working with to get your supplies and necessary business services?
Q.2 Do you have a contract with these enterprises/individuals? (type of interaction and degree of integration)
Q.3 How has this relationship evolved in the past two years? Are there any problems emerging?
Q.4 If there are problems what are you doing, or do you intend to do about them?

RESPONSE FROM AND/OR IN THE ENTERPRISE

Risk Reduction, prevention schemes (measures undertaken to reduce the number of HIV/AIDS cases)

Hypothesis:

H1: The company has undertaken specific measures to cope with the HIV/AIDS issue
H2: Workers and/or employees representatives have undertaken specific measures to cope with the HIV/AIDS issue.

Questions:

Q.1 Has the company already undertaken any concrete measures within the company to reduce the risk of HIV infection (e.g. educational and training, health promotion, provision of condoms, partnership with NGO or government, etc.)?
Q.2 If yes, which measures?
Q.3 Has the company planned any further measure to be undertaken during the current year to reduce the risk of HIV infection?
Q.4 Does the workforce participate and co-operate with these initiatives (level of response from the workforce)?
Q.5 What are the factors for participation or lack of participation (concrete example)?
Q.6 Has there been any initiative from the workers themselves or from the workers representatives?
Q.7 If yes, how is the company responding to this?

Risk Mitigation (measures undertaken to reduce the impact)

Hypothesis: The company has undertaken measures to reduce the impact of HIV/AIDS on productivity and/or costs

Questions:

Q.1 Has the company increased the use of outsourcing and casual labour?
Q.2 Has the company postponed any investment or expansion plans in the last two years
Q.3 If yes, has HIV/AIDS anything to do with such decisions?
Q.4 Has the company increased its effort to multi-skill and multi-task its labour force within the past two years?
Q.5 If yes, has HIV/AIDS anything to do with such decisions?
Q.6 Has the company cut down its staffing level within the past two years (particular groups of employees)?
Q.7 If yes, has this involved the introduction of labour-saving equipment, machine or technology?
Q.8 Has HIV/AIDS anything to do with such decisions and changes?
Q.9 Is double staffing being used as a solution to HIV/AIDS impact on the company?
Q.10 Is relocation of activities being used as a solution to HIV/AIDS impact on the company?
Q.11 Is hiring expatriates being used as a solution to HIV/AIDS impact on the company?
Q.12 Any other measures?

Coping (after shock)

a. Reduce direct costs (care, death, etc.) by altering benefit entitlement?
b. Down-scaling activity?
c. Reorganise work; lower staffing level, increasing or decreasing shifts?

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