

The private sector responds to the epidemic:



Debswana—a global benchmark



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Cover photo:
*Debswana employees in
a class presentation on HIV/AIDS*
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*Geneva, Switzerland
2002*

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Preface

In many respects, Botswana is Africa's success story. It is a peaceful, democratic and prosperous country, with a standard of living and quality of life that have improved steadily in recent decades, largely as a result of good governance and sound public finance. At independence, Botswana was one of the world's poorest countries but, over the past 30 years, its economic growth rate has been one of the highest worldwide. This rapid growth was initially driven by minerals (with the diamond mines remaining central to the economy) but there has also been diversification of economic activity.

By 2000, most children were receiving primary- and secondary-level education, and literacy rates were above 70%. Nearly 90% of the population were within reach of State health facilities, and 98% of one-year-olds were fully immunized against BCG. The approximately 1.6 million citizens enjoyed a per capita income of US\$3240.

Despite these achievements, Botswana has the worst HIV/AIDS epidemic in the world. According to the *Report on the global HIV/AIDS epidemic, June 2000*, the adult HIV prevalence rate was 35.8%—over 10% higher than the next-highest country, Swaziland, which has a HIV rate of 25.25%. The latest government sentinel surveillance does not show any improvement in the situation. (Table 1 gives key data for Botswana and its neighbours.)

Table 1. Key HIV/AIDS data: Botswana and its neighbours

| | People living with HIV/AIDS, as of end of 1999 (thousands) | | Children orphaned by AIDS (thousands) | | Population (thousands) | |
|---------------------|--|--------------|---------------------------------------|-----|------------------------|--------|
| | Adults and children | 15–49 adults | Adult rate % | No. | % orphans | |
| Botswana | 290 | 280 | 35.8 | 66 | 4.1 | 1 592 |
| Namibia | 160 | 150 | 19.54 | 67 | 3.9 | 1 689 |
| South Africa | 4 200 | 4 100 | 19.94 | 420 | 1.05 | 39 796 |
| Swaziland | 130 | 120 | 25.25 | 12 | 1.2 | 981 |
| Zambia | 870 | 830 | 19.95 | 650 | 7.2 | 8 974 |
| Zimbabwe | 1 500 | 1 400 | 25.06 | 90 | 7.8 | 11 509 |

Source: UNAIDS, *Report on the global HIV/AIDS epidemic, June 2000*

Why is Botswana so badly affected and what can be done? This document describes the AIDS response of the most important company in the country—Debswana, the diamond-mining company. It represents a ray of hope in a bleak situation and has much to teach the private sector in the rest of the region and, perhaps, globally.

1. Introduction

HIV/AIDS in Botswana

The first AIDS case was diagnosed in Botswana in 1985, after which it took some years for the epidemic to become established. By 1991, there had been a total of only 178 AIDS cases reported. There were, however, worrying signs of HIV spread. Surveys of donated blood revealed that HIV prevalence was increasing in the population. In this non-representative group, HIV prevalence rose from 0.93% in 1987 to 3.35% in 1989 (Ministry of Health, Report on Botswana National AIDS Control Programme Review, November 1990).

In 1990, the first HIV sentinel surveillance of antenatal clinic attendees was undertaken in the capital Gaborone and in the Boteti rural area. HIV prevalence was 6% in Gaborone and 4.1% in Boteti (UNAIDS, Epidemiological Fact Sheet 2000 update, http://www.unaids.org/hivaidsinfo/statistics/fact_sheets/pdfs/Botswana_en.pdf). In 1992, national sentinel surveillance studies were begun and have been conducted every year since. They are shown in Table 2. It should be noted that Gaborone and Francistown are the two main cities that have been sampled every year; however, sampling from a variety of other sites has been carried out periodically to give a better idea of what is going on across the country.

Table 2. HIV sentinel surveillance of antenatal clinic attendees

| | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---------------------------|------|------|------|------|------|------|-------|------|------|
| Francistown | 23.7 | 34.2 | 29.7 | 39.6 | 43.1 | 42.9 | 43.0 | 42.7 | 44.4 |
| Gaborone | 14.9 | 19.2 | 27.8 | 28.7 | 31.4 | 34.0 | 39.1 | 37.1 | 36.2 |
| Ghantsi | | 9.5 | | 18.9 | | | 22.3 | | 26.4 |
| Kanye (Southern) | | | 16.0 | | 21.8 | | 24.67 | | 40.7 |
| Molepolole (Kweneng East) | | 13.7 | | 18.9 | | | 37.2 | | 30.4 |
| Selebi Phikwe | | | 27.0 | | 33.1 | | 49.89 | | 50.3 |
| Tutume | | | 23.1 | | 30.0 | | 37.45 | | 35.4 |

Source: The National AIDS Coordinating Agency (NACA) Botswana (2000). *HIV sero-prevalence sentinel survey amongst pregnant women and men with sexually transmitted disease*. A technical report, AIDS/STD Unit, December 2000.

The surveillance is carried out in accordance with internationally accepted standards and can be assumed to give an accurate picture of the epidemic in the country. Because Botswana has invested so much in its public health system, it has very good coverage. According to the *Botswana Human Development Report 2000*, only 12% of the population do not have access to health care (Government of Botswana & United Nations Development Programme, *Botswana human development report 2000, towards an AIDS-free generation*, Gaborone, 2000, p66). The national median seroprevalence and age-specific seroprevalence for the 15–19-year-old female age group are shown in Table 3.

Table 3. National seroprevalence and 15–19-year-olds' seroprevalence

| | National median seroprevalence | Median age-specific HIV % (15–19-year-olds) |
|------|--------------------------------|--|
| 1993 | 22.5 | 21.8 |
| 1994 | 25.4 | 20.7 |
| 1995 | 32.4 | 32.4 |
| 1996 | 33.2 | 27.2 |
| 1997 | 35.2 | 28 |
| 1998 | 33.5 | 28.6 |
| 1999 | 35.9 | 21.5 |
| 2000 | 38.5 | 26.7 |

Source: The National AIDS Coordinating Agency (NACA) Botswana (2000). *HIV seroprevalence sentinel survey amongst pregnant women and men with sexually transmitted disease*. A technical report, AIDS/STD Unit, December 2000.

Using the 2000 survey data, the National AIDS Coordinating Agency (NACA) calculated that 277 000 Botswanans aged between 15 and 49 years were infected—slightly below the 1999 UNAIDS estimate of 290 000, shown in Table 1. (NACA does not estimate the number of orphans or children infected.)

The conclusions reached in the 2000 report make for sobering reading: “The Botswana HIV epidemic is still on the increase, based on the trend analysis in all sites except Gaborone and Francistown, which seem to have maintained the same prevalence over the last two-to-four years. The 15–19-year-old and 20–29-year-old age groups appear to be the worst affected by the epidemic. This indicates that the epidemic is still growing [and] is bound to wipe [out] all the current economic achieve-

ments and also change the demographic profile of the country” (NACA 2000, p.24).

Despite the serious HIV epidemic, the impact of illness and death is still to be felt. Indeed, the 1997/98 demographic survey found that adult mortality had not risen to the degree projected. This may be due to the rapid speed with which HIV has spread in Botswana and to the fact that mortality rates only started to rise rapidly after the demographic survey. A possible alternative explanation is that national development, higher incomes and national social services in Botswana mean that HIV-infected people live longer.

It is striking that the *Human Development Report Annex on the Demographic Impact of the AIDS Epidemic* (produced two years after the survey) includes a box entitled, ‘Laying the Bodies to Rest’, which quotes a funeral parlour director: “We are certainly burying more young people these days”. The parlour reports that the number of funerals has risen from 10–20 per month to 60–70 (Government of Botswana & UNDP, 2000 p.60).

The country saw a significant improvement in life expectancy between 1971 and 1991. Over this period, life expectancy rose from 55.5 to 61.7, and the survey of 1997/98 estimates it at 66.2. However, there is no doubt that the HIV/AIDS epidemic will have demographic, economic and social impacts, and the United Nations Development Programme (UNDP) projects a significant decline in life expectancy, as shown in the table below. (South Africa and Zimbabwe are included to provide comparative data.)

Table 4: Life expectancy and Human Development Index rank

| | 1996 Report (1993 data) | | 1997 Report (1994 data) | | 1999 Report (1997 data) | | 2001 Report (1999 data) | |
|---------------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|
| | Life expect. | HDI (rank) | Life expect. | HDI (rank) | Life expect. | HDI (rank) | Life expect. | HDI (rank) |
| Botswana | 65 | 0.741 (71) | 52.3 | 0.673 (97) | 47.4 | 0.678 (122) | 41.9 | 0.577 (114) |
| South Africa | 63.2 | 0.649 (100) | 63.7 | 0.716 (90) | 54.7 | 0.717 (89) | 53.9 | 0.701 (94) |
| Zimbabwe | 53.4 | 0.534 (124) | 49.0 | 0.513 (129) | 44.1 | 0.507 (130) | 42.9 | 0.544 (117) |

Source: UNDP, *Human development reports*, 1996, 1997, 1999, 2001

It is evident from this table that, according to UNDP, life expectancy has fallen dramatically over the past few years and this trend is expected to continue. The US Census Bureau has a somewhat bleaker view, predicting in 2000 that life expectancy would be only 39.3 in 2000 and would fall as low as 29 in 2010 (US Census Bureau, 2000).

Infant and child mortality rates are set to rise, eroding the gains made since independence. Between 1971 and 1991, the infant mortality rate per 1000 fell from 92 to 54. The UNDP figures are shown on Table 5. The US Census Bureau estimates for the infant mortality rate are 59.3 in 2000 and 55.2 in 2010.

Table 5: Infant and child mortality

| | UNDP 1996 | | UNDP 1997 | | UNDP 1999 | | UNDP 2001 | |
|---------------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|-----------------|
| | Infant mortality | Child mortality | Infant mortality | Child mortality | Infant mortality | Child mortality | Infant mortality | Child mortality |
| Botswana | 42 | 54 | 55 | 52 | 39 | 49 | 46 | 59 |
| South Africa | 52 | 68 | 51 | 67 | 49 | 65 | 54 | 69 |
| Zimbabwe | 67 | 81 | 70 | 74 | 53 | 80 | 60 | 90 |

Another indication of the potential impact of the disease is given in the UNAIDS *Report on the global HIV/AIDS epidemic, June 2000* (p.26). The report estimates that a 15-year-old's lifetime risk of death due to AIDS, assuming unchanged risk of HIV infection, is over 80%. Even if the risk of HIV infection were halved, the risk of death from AIDS would still approach 60%.

There has been work done on the macroeconomic impact of HIV/AIDS, with a report commissioned by the Ministry of Finance and Development Planning (BIDPA, 2000)—one of a number of studies on the impact of HIV/AIDS. This focused on GDP growth and per capita incomes from 1996 to 2021. It estimated that GDP growth would fall from 3.9% a year without AIDS to between 2.0% and 3.1% a year with AIDS. After 25 years, the economy will be 24–38% smaller. Wages are expected to rise, with those of skilled workers rising most, while unemployment levels will fall, reflecting labour shortages at some levels.

The Botswana Government commissioned a comprehensive review of the consequence of AIDS for the budget. The review concluded that, “AIDS is a development of such proportions that it will inevitably have an impact on government revenues and spending, and therefore on the

budget balance and government saving or borrowing. AIDS will have direct effects on some key areas of government spending—most obviously the health budget—but there will also be a range of indirect effects as the ability to raise tax revenues is affected” (BIDPA, 2000, p 58). The impact of AIDS on expenditure is shown in Table 6.

Table 6: Estimates of impact on recurrent government expenditure after 10 years

| Budget categories | low | medium | high |
|----------------------|-------------|--------------|--------------|
| health | 3.0% | 7.5% | 12.0% |
| poverty alleviation | 3.0% | 3.5% | 4.0% |
| employment | 1.7% | 2.3% | 2.9% |
| orphans allowance | 0.3% | 0.6% | 1.2% |
| recruitment/training | 0.2% | 0.3% | 0.5% |
| destitutes allowance | 0.1% | 0.1% | 0.1% |
| other | -0.4% | -0.5% | -0.6% |
| pensions | -0.5% | -0.6% | -0.8% |
| education | -0.6% | -0.8% | -0.9% |
| Total | 6.9% | 12.5% | 18.4% |

Source: BIDPA 2000. *Macroeconomic impact of HIV/AIDS in Botswana*. February/March report.

The government will have to spend between 7% and 18% more by 2010 because of AIDS, assuming current levels of service are maintained. The greatest share of spending will go to health care, followed by poverty alleviation. However, estimates for health expenditure do not allow for antiretroviral therapy.

Even these figures underestimate the demand for government resources because:

- there is no provision for increased numbers of hospital beds or health-care facilities, therefore it is assumed that services will be provided through the existing infrastructure;
- they do not take into account increased poverty and loss of employment, which means that, as people exhaust their own resources or benefits, the demand for public health care will increase.

Botswana is one of only three countries in the region to make social welfare transfers (the others being South Africa and Namibia). These social benefits are paid monthly and include an orphans' allowance of US\$42 (plus an annual clothing allowance of US\$74), an allowance of US\$20 for village 'destitutes', an old-age pension of US\$27, and a world war veterans' allowance of US\$49 (calculated at the May 2000 exchange rate of US\$0.1919 to the Pula, Botswana's currency).

There are some savings. Less is spent on pensions as fewer people reach pensionable age. Fewer births and higher infant and child mortality rates mean fewer children require education. However, this does not take into account the fact that expenditure may have to increase so as to keep children in school. For example, orphans and AIDS-affected families may not be able to afford school fees, uniforms and books and will have to be assisted by the public purse.

As calls on government expenditure increase, revenue will decrease (as shown in Table 7). The country is fortunate, however; the bulk of government revenue is derived from the diamonds that are sold outside Botswana, so the market will not be affected by AIDS. (The potential impact on cost of production was not taken into account.)

Table 7: Impact of HIV/AIDS on government revenue

| | % of revenue | Revenue reduction |
|-----------------------------|--------------|-------------------|
| Mineral revenue | 49% | 0% |
| Customs revenue | 19% | 20% |
| Tax revenue | 19% | 20% |
| Interest on reserves (BoB*) | 8% | 24% |
| Other sources | 6% | 0% |
| Total revenue | 100% | 9.6% |

* Bank of Botswana

Source: BIDPA (2000) *Macroeconomic impact of HIV/AIDS in Botswana*. February/March 2000 report.

The HIV/AIDS response

Botswana's response to the HIV/AIDS epidemic can be divided into three distinct phases. The early phase (1987–1989) focused mainly on screening of blood to eliminate the risk of HIV transmission to patients through blood transfusion as well as the introduction of information, education and communication (IEC) programmes. The second phase (1989–1997) saw the addition of counselling courses for health-care workers and guidelines for syndromic approach to the treatment of sexually transmitted infections and for treatment of opportunistic infections. During the third phase (1997–2002), the response gradually expanded to include all stakeholders—government ministries and departments, nongovernmental organizations (NGOs), community-based organizations (CBOs), faith-based organizations (FBOs), people living with HIV/AIDS, and the private sector. The third phase is distinguishable from the others by its comprehensiveness and the emergence of concern and action on the part of the political leadership. At the turn of the century, the choice was between a 'business as usual' approach and national mobilization. Having chosen the latter, Botswana now treats the HIV/AIDS epidemic as a national crisis.

The National Policy on HIV and AIDS provides for a multisectoral response under which individual agencies—private and public—are expected to make their contribution to the collective effort. Key agencies are assigned responsibilities as follows:

- The Office of the President provides political leadership for the national response and ensures that all sectors are mobilized.
- The Department of Information and Broadcasting, in collaboration with the Ministry of Health, NGOs and CBOs, plays an active role in disseminating information on HIV/AIDS.
- The Directorate of Public Service Management will develop a policy for the management of HIV/AIDS in the public service and ensure that workplace HIV/AIDS programmes are implemented throughout the public sector.
- The Ministry of Health is required to 'lead the development and refinement of strategies for prevention and care, involving other government agencies, NGOs and the private sector' and 'provide technical support to the other ministries and sectors as they develop and implement their own HIV/AIDS prevention and care activities'.

- The Ministry of Education has to incorporate HIV/AIDS and STI education into all levels and institutions of education and to involve parents more actively in that process.
- The Ministry of Labour, Home Affairs and Social Welfare is tasked with ensuring that the rights of HIV-infected individuals (including workers) are protected, and with developing and implementing HIV/AIDS prevention programmes for relevant groups within its purview. These groups include prisoners, women and young people.
- The Ministry of Finance and Development Planning will mobilize resources to finance the HIV/AIDS-related activities of line ministries and commission research on specific aspects of HIV/AIDS.
- The Ministry of Local Government will assume primary responsibility for carrying out eligibility assessment for social support for people living with HIV/AIDS and for orphans.
- Other ministries will develop their own policies in line with the National Policy on HIV and AIDS.
- Private firms are expected to 1) develop HIV/AIDS programmes for their staff, in line with the National Policy; 2) mobilize private sector resources for HIV and AIDS; and 3) integrate HIV/AIDS into their training programmes.
- NGOs and CBOs will take responsibility for advocacy and social mobilization, the design and implementation of innovative prevention and care programmes, as well as mobilizing resources for community- and home-based care.

The new, multisectoral approach is supported by the National AIDS Council, which is chaired by the President and coordinated by the National AIDS Coordinating Agency (NACA). This agency serves as secretariat to the National AIDS Council and is a link between policy-makers and programme implementers. The National AIDS Council meets every quarter and consists of all the sectors mentioned above.

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The Antiretroviral Therapy (ART) Programme started in February 2002 at Princess Marina Hospital, the referral hospital in Gaborone. This will be extended to other sites such as Francistown, Maun and Serowe, with each site catering for its own catchment areas. It is expected that about 19 000 patients will be treated by the end of 2002. The eligibility criteria are clinically-based and include the following patient categories:

- all adult AIDS inpatients;
- all paediatric AIDS inpatients;
- all HIV-positive people who have tuberculosis; and
- pregnant mothers and their partners, if they qualify on clinical grounds.

Groundwork to assess and develop capacity for laboratories, training of health-care workers, procurement, storage and distribution of drugs, as well as infrastructure for counselling, treatment and information management systems, has been carried out and will continue as the programme develops. The antiretroviral (ARV) treatment protocol has also been developed to guide practitioners. At the end of 2002, the programme will be extended to other district hospitals as and when they have the basic requirements for implementation. This programme is one to which the Government of Botswana is committed, but it is also receiving a considerable amount of support from various foundations and American medical establishments.

The implementation follows the signing of an agreement in October 2001 between the Government of Botswana and African Comprehensive HIV/AIDS Partnerships Incorporated (ACHAP), which is a joint arrangement between Merck Company Foundation and the Bill and Melinda Gates Foundation. Its objectives include: 1) improving access to comprehensive HIV prevention, care and support; 2) prevention and treatment of opportunistic infections; and 3) implementation of ART in the public sector.

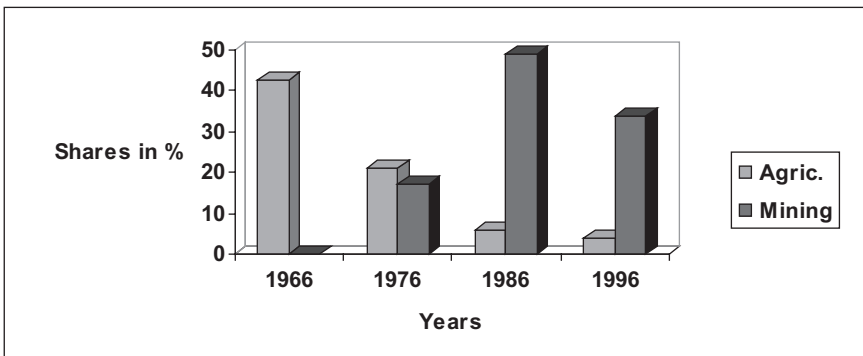
2. The Botswana economy

The Botswana economy has been regarded as one of the most successful economies in Africa, having moved from a totally agrarian economy to an economy that is dominated by the mining sector and growing rapidly. Its growth rate has been exceptional, by global standards. In the period 1981–1991, the country's gross domestic product showed an average annual growth rate of 10%.

At independence in 1966, Botswana was one of the poorest countries in Africa, with an overwhelmingly rural population depending solely on agriculture for its livelihood. Beef production was the mainstay of the economy in terms of output and export earnings. During that time, the mining sector was non-existent. Poverty was exacerbated by severe and prolonged droughts that devastated the nation's cattle herd.

Due to lack of job opportunities at home, over 30% of young Botswana men worked in the South African mines. The communications infrastructure was barely developed, except for the railway line running through the east of the country from South Africa to what was formerly Southern Rhodesia (now Zimbabwe), which was owned and run by Rhodesian Railways. At independence, the government depended on foreign aid to finance a large part of its recurrent expenditures and all of the development programmes.

Figure 1: Agriculture and mining sectors' economic shares



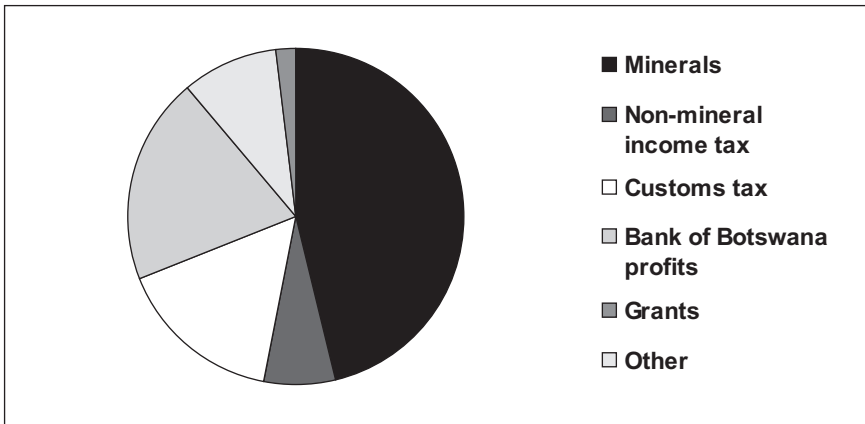
Source: Government of Botswana, National Development Plan 8 1997–2003, Gaborone 1997

In the late 60s and early 70s, major events took place that dramatically transformed the country's economic and financial position. Diamonds were discovered at Orapa; a copper nickel mine was established at Selibe Phikwe; the Southern African Customs Union Agreement was renegotiated.

ated more favourably for Botswana, and beef exports were increased, at a better price. Additional commercially-exploitable diamond deposits were discovered in Letlhakane in the late 70s and in Jwaneng in the early 80s. This boosted the economy further, especially as the Jwaneng mine is one of the world's largest diamond producers in terms of value.

The mining sector has grown tremendously over the past 25 years. Its average annual growth rate has been recorded at 13% since 1975. The sector has always been the largest single contributor to gross domestic product, constituting an average of 33% of the total. Revenues from minerals are the largest single component of government revenues, making up over 45%.

Figure 2: Composition of Botswana Government revenues and grants



Source: National Development Plan 8 (1997–2003)

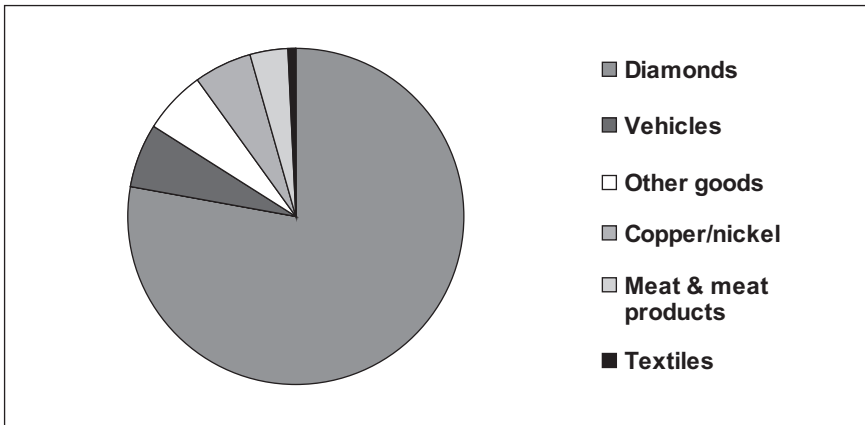
In 1966, Botswana's gross domestic product was recorded at US\$7.1 million. It rose to US\$124.7 million in 1979 and, in 2000, it was an impressive US\$2.9 billion. Real per capita income increased from US\$323 in 1966 to US\$1005 in 1986 and US\$1802 in 2000, ranking Botswana among the top five on the continent.

Since independence, government policy has been aimed at improving the standard of living throughout Botswana. A massive construction programme was implemented in the 80s to build schools, roads, hospitals and clinics countrywide. The social sectors improved greatly over time. There were major improvements in infrastructure, with increased access to potable water, electrification programmes and many new roads being

built. Botswana is considered to have one of the best primary health-care programmes in the world, with over 85% of the rural population within a radius of 15km of a health facility, and education is also among the best in the continent, with free basic education for all. These social developments were made possible by the proceeds obtained from diamond sales.

Botswana has a limited export base. Diamonds are the main exports, and they constituted 75%, on average, of the total annual exports during the 8th National Development Plan—the most recent plan (1997–2003). The remaining 25% of the exports were made up of vehicles, copper, nickel, meat and meat products, textiles and other goods.

Figure 3: Composition of exports



Source: National Development Plan 8 (1997–2003)

Botswana has recorded positive trade balances since 1985, and diamonds have been responsible for this. The country has also been able to accumulate huge reserves. The government has taken advantage of the opportunities presented to it and expanded in a controlled and prudent manner. Political stability and consistency in implementation of agreed policies has played a major role in Botswana’s success.

3. Debswana Diamond Company

Debswana Diamond Company (PTY Ltd) is owned in equal shares by the Government of Botswana and by De Beers Centenary AG. Representation of the shareholders on the Board of Directors is also on an equal basis. The company mines diamonds at three operations in Botswana, namely the Orapa, Letlhakane and Jwaneng mines. The Orapa and Letlhakane mines, which are in the Central District and are 50km apart, fall under one administration based at Orapa. The Jwaneng mine is located in the southern part of the country. In addition, the Botswana Diamond Valuing Company (BDVC), which sorts and values diamonds, the Teemane Manufacturing Company (TMC), which cuts and polishes diamonds, Morupule Colliery and Mesedi Farms are fully-owned subsidiaries of Debswana. The company's head office is in Gaborone, the capital city.

The diamond mines employ just over 5000 people between them and the total number of employees (including those at the subsidiaries and the Head Office) was 6169 at the end of December 2001. From the start, the company established fully-fledged communities at the diamond mines. These had high standards of housing for both married and single employees, shopping and recreational facilities with swimming pools, gymnasiums, football, golf and racquet clubs, primary schools and two well equipped hospitals with 100 beds each at each centre. The employees receive subsidies for school fees, housing rental and utilities. The schools also cater for children of non-company employees who are resident in the mining towns and the hospitals cater for all residents, as well as serving as referral hospitals for the surrounding areas.

The company is committed to the following values, which are fundamental to its business philosophy:

- the achievement of global standards in operating performance and capital utilization through the best management practices;
- encouraging a culture and environment of innovation and creativity;
- the development of people, including recognition and appreciation of effort;
- conducting all operations with minimal impact on the environment;
- maintaining honesty and integrity in all dealings;
- upholding the safety and health of employees;

- encouraging honest, open, multidirectional, timely and clear communication;
- treating each other with respect;
- encouragement of teamwork through involvement and participation by all employees in matters affecting them; and
- fulfilling its social responsibility as a corporate citizen by maintaining high standards and ethics.

4. The early years

AIDS education and awareness

Debswana's AIDS education and awareness programme started in 1988/89, in response to the first AIDS cases seen at the Jwaneng Mine Hospital in 1987 and at the Orapa Mine Hospital in 1989. The education was initially carried out by a team of medical doctors and nurses on a part-time basis and was primarily aimed at other health-care workers.

A small-scale 'knowledge, awareness and practice' (KAP) study, conducted by one of the doctors studying for a diploma in community health at Jwaneng in 1990, highlighted the need to extend the education programme to the rest of the workforce. A major education and awareness campaign that included the use of posters, distribution of pamphlets, use of videos, motivational talks by people living with HIV/AIDS (PLWHA) and others, seminars and workshops was launched in 1991.

Appointment of full-time AIDS Programme Coordinators

The need to formalize the education programme and to extend it to the rest of the workforce required the employment of full-time resource people who would be responsible for the dissemination of information on national education and preventative initiatives and for integrating these into company activities. This was done through the employment of full-time AIDS Programme Coordinators at the Jwaneng mine in 1991 and at the Orapa mine in 1992. Their function, among others, was to provide information, extend education to the rest of the workforce, identify opportunities for integrating AIDS education into other areas of work, and

to coordinate the activities of the various support structures—namely peer educators, counsellors and various AIDS committees.

Development of a HIV/AIDS management policy

As the education and awareness campaigns were extended to the workforce and their families, the company identified a need to articulate a policy that would serve as a basis for the education programme and related activities. Most importantly, the policy was developed to articulate the company's position and practices regarding employees who were infected with HIV.

The policy was developed in line with the company's strategy on health and safety. It was presented to the entire workforce through the medium of theatre. The policy embraces the international norms of non-discrimination and no pre-employment testing, and emphasizes education and information dissemination. It also stipulates various responsibilities for managers and sets out the roles of the support services, including home-based caregiving, counselling, peer education and a practitioners' forum.

Other related policies are those on occupational health and on safety and loss of control. These seek to create a safer working environment, reduce the number of injuries on duty, improve the health of employees and their families, and reduce the incidence of HIV.

Prevalence study

Between 1996 and 1999, the company began to experience HIV/AIDS-related morbidity and mortality among the workforce. A significant percentage of ill-health retirements over this period (40% in 1996 and 75% in 1999) was AIDS-related. In 1996, 37.5% of deaths were AIDS-related; in 1997, this figure rose to 48.3% and, in 1999, to 59.1%.

During this time, the company became aware of medical advances in the treatment of HIV/AIDS—in particular, the development of antiretroviral drugs that reduce the viral load and boost the immune system, thus prolonging the lives of people who have become ill. In view of these developments, the company sought to establish the level of HIV prevalence among the workforce so that it could consider the feasibility of making antiretroviral drugs available to HIV-infected employees and what contribution the company could make to costs.

A voluntary anonymous prevalence survey using saliva tests was conducted in May 1999 to establish prevalence levels by grade and age at the three diamond mines, BDVC and the head office. There was a high degree of participation in the survey. The results showed that 28.8% of the 5261 employees were HIV-positive. More detail on the prevalence study is given in Section 7.

Pre-investment testing

While the prime objective of the prevalence survey was to consider the feasibility of providing antiretroviral therapy, clearly therapy was not seen as the only answer. The company considered a number of risk-reduction strategies and, when examining the results of the prevalence survey, the 27.6% prevalence rate found among the skilled workers highlighted the need to institute HIV testing of sponsorship and apprenticeship candidates.

The company's sponsorship programme started in 1969 and the apprenticeship scheme in 1974. The costs of the scholarship programme alone had risen from US\$808 000 in 1996 to US\$2 100 800 in 1999 and US\$3 555 2000 in 2000 (pre-inflationary figures).

Effective from the year 2000, the company adopted a policy of testing all scholarship and apprenticeship candidates at the start of their training, and then re-testing them two years later. This policy was adopted in view of the high prevalence rates in the company and the fact that the apprenticeship and scholarship schemes are the main sources of skilled manpower for the company. Apart from safeguarding the company's investment, the policy is seen as an incentive for young people to remain uninfected.

The test results for the first group of 56 candidates who were tested in May 2000 revealed that only one candidate was HIV-positive. In June 2001, 70 candidates were tested and all were HIV-negative—an encouraging result, in view of the age group concerned (18–24-year-olds). The exercise met all the requirements of informed consent and included pre- and post-test counselling.

5. Institutional audit

Background

Two concepts inform the institutional audit: susceptibility and vulnerability. These have been explored and described at length in another UNAIDS publication (*Guidelines for the preparation and execution of studies of the social and economic impact of HIV/AIDS*, 2000). In this context, the idea of **susceptibility** describes those features of an organization that make it more or less likely that its workers will contract HIV infection. For example, employment of large numbers of migrant workers or demands that certain male employees spend long periods travelling away from home on company business will increase individuals' susceptibility. In contrast, **vulnerability** describes those aspects of an organization that make it more or less likely that unusual levels of illness and/or death will have negative effects on organizational performance. For example, in cases where production involves closely coordinated chain processes that are dependent upon key workers with rare skills, death or illness among such operatives would severely affect the entire production process.

During the 1990s, it was widely rumoured that a number of large international companies with major investments in Africa were considering their business scenarios in the light of the impending AIDS epidemic. Early studies were undertaken in the banking and mining sectors in Zambia, and in the soft drinks sector in Côte d'Ivoire. However, the results of these studies were not published for reasons of commercial sensitivity, and their methods and conclusions remain unknown. Other such studies may also have been carried out, but may, once again, have been kept completely confidential.

In the mid-1990s, two studies of the effects of HIV/AIDS on performance in business organizations became publicly available. One was a study of the potential impact of the epidemic on a sugar plantation and processing enterprise in Zambia, the Nakambala Sugar Estate (Barnett and Haslwimmer, 1993). The other study looked at a tea estate in Malawi (Jones C, 1996, *The Microeconomic implications of AIDS*, MA dissertation in the School of Development Studies, UEA, Norwich, UK). In addition, one of the authors of this paper (Alan Whiteside) was involved in two assessments of the impact of HIV/AIDS, neither of which was published. The first looked at the impact of AIDS on a sugar estate in Swaziland and was completed in 1992; the second was a review of the effect of AIDS on a number of Commonwealth Development Corporation operations in Zambia. All of these studies contributed to

the development of the institutional audit method used by Debswana (see below).

The main lesson learned from these earlier studies was that the impact of HIV/AIDS couldn't be considered only, or even most importantly, in financial terms. Conventional economic and financial modelling techniques do, of course, have a great deal to contribute. Private sector activities are profit-driven. Private enterprise does not provide welfare services, although most large companies recognize the relationship between employee satisfaction and provision of benefits. For most senior managers, the questions that they have to address in the face of a HIV/AIDS epidemic seem very straightforward:

1. What is the effect of this disease?
2. How do we measure it?
3. What can we do about it?

Their natural tendency is to adopt an accountancy approach, using either the wage bill or operating profit as the main indicator of impact. They then look at costs and try to ascribe AIDS-related costs by department, activity or cost centre. These are then added together to provide an estimate of current costs and then projected forward to give an estimate of future costs.

But the impact of HIV/AIDS on an organization is too complex to be considered only in these terms. In addition to the bottom line, HIV/AIDS affects, among other elements, staff morale, public perceptions of the organization, institutional memory, labour relations, and the community in which the organization is situated. For this reason, the method used in the Debswana institutional audit is considerably broader than the accountancy approach and enables the organization to respond to potential impact on a wider front. The concepts underlying the audit are outlined in the next section.

The institutional HIV/AIDS audit: a six-step process

An institutional audit consists of the following components that form a series of linked steps in the process:

- personnel profiling
- critical post analysis

- assessment of organizational characteristics
- estimate of organizational liabilities
- productivity
- organizational context

Each of these steps is examined in turn.

Step 1: Personnel profiling: what kinds of people are employed?

This question is addressed in relation to two subquestions: which groups (if any) among employees are most likely to be susceptible to infection? What different skill levels exist in the organization; what are their characteristics and what is their strategic importance to the organization?

Susceptible groups:

- Are there particular groups among employees who may be particularly exposed to infection?
- Why are they exposed?
- Can/should the organization do anything to reduce this exposure?
- Will undertaking such programmes benefit the organization?
- Should all employees be included or only those who are most difficult to replace?

Skill levels:

- What skill levels are there in the organization?
- How many people are there at each level?
- What are the costs of training/replacing these people?
- Given the known and predicted rates of seroprevalence, how many people might be expected to become ill or die each year over the next x years in each category of employment?

Ease of training and replacement:

- How easy will it be to train or recruit personnel at each skill level, considering costs and time for training and also the state of the national and regional labour market?

Step 2: Critical post analysis:

- Are there key personnel whom it will be particularly difficult to replace, and on whom a production or administrative process depends (for example, the ‘institutional memory’ or the person who knows how to use the computer)?

Step 3: Organizational characteristics

Size of organization and flexibility of employees

- How easy will it be to replace or retrain within the organization?
- Are there sufficient people to allow for internal training?
- Should the organization introduce ‘shadowing’ of key employees (i.e. employ an additional staff member for every critical post)?
- Does it have sufficient internal resources to be able to undertake replacement and/or training or replacement of personnel?
- Is it big enough to move people around to take over other people’s jobs?
- What is the lead time for training or recruiting a replacement for different skill levels?

Step 4: Liabilities

The potential or actual liability of an organization will be determined by some or all of the following factors:

- **Level and type of employee benefits.** This relates to contracts of employment and considers the benefit packages.
- **Level of labour value added.** For a production or a commercial organization, this measures the part of gross profit attributable to the work done by labourers. Variables to be considered here are: quantity of labour/quality of labour (seen in levels of pay); and labour as a proportion of all inputs to product. In a software design enterprise, the labour value added will be large, and in a bottling plant, labour value added will be small.

Step 5: Productivity

There may be a reduction in the quality and quantity of labour supplied by employees who are sick or are caring for sick dependants. Absenteeism may result in a slow and barely detectable decline in output in any organization. How is this going to be detected and managed?

Labour/capital substitution:

- Can capital be used to replace people who are sick or have died?
- Could larger numbers of unskilled workers replace the lost skilled workers?

Out-sourcing and ‘multi-skilling’:

- Can non-core functions (for example, security and cleaning) be out-sourced? This is a possible solution for the enterprise but it must be noted that, while such tactics will shift the problem away from the company, it will not solve the problem at a national level.
- Can staff be trained to have multiple skills enabling them to do their own and others’ jobs, should the situation demand it?

Step 6: Organizational context:

- What is the legislative and industrial relations framework?
- What must an organization do for its workers in the way of invalidity benefit, keeping them at work while they are HIV-positive but are not ill, or when they have AIDS but are not too sick to work?

The steps and activities of an institutional audit are summarized in Figure 4 (see next page).

Figure 4: Steps and processes of an institutional audit¹

| ACTIVITY | JUSTIFICATION | OUTCOME | RESOURCES | CHALLENGES AND ASSUMPTIONS |
|--|--|--|---|--|
| <p>1. Internal (and, if necessary, external) performance/ impact appraisal of the organization</p> | <p>Increase productivity</p> <p>Establish base profitability</p> <p>Establish base sustainability</p> | <p>Identify the necessity and nature of institutional audit. In particular, you need to answer these questions:</p> <ol style="list-style-type: none"> 1. Why are you considering an audit? 2. Do you need to complete all of the steps in this table? 3. Which of the following steps is it appropriate to attempt? 4. What will you gain from doing them? 5. How many of the next steps are necessary? 6. How many of the six steps set out in the text (see Chapter 5) is it appropriate to complete for your organization and for your purposes? | <p>Annual financial statements, sectoral legislation, mission statements, strategic plan and previous budget</p> | <p>Systematic organizational management/ monitoring tools are used and reports are available</p> |
| <p>2. Establish the current profile of the organization—e.g. use SWOT (strengths, weaknesses, opportunities and threats) analysis</p> | <p>Identify new opportunities and possible threats; minimize impact of weaknesses; and maximize potential of strengths</p> | <p>Potential susceptibility/ vulnerability are agreed and prioritized in the order of their potential impact on institutional productivity and/or sustainability potential</p> | <p>Consolidated Management Information System [MIS]² reports and performance appraisals, and independent facilitators and arbiters</p> | <p>MIS and/or performance and/or appraisal systems exist and can be used</p> |

¹ This table is based on ideas developed by Dennis Bailey at a Social and Economic Impact Policy Research Workshop in Durban, South Africa in 1999.

² MIS—management information system—is a system of data collection and organization designed to provide management with information that will answer key strategic questions: how many people, and at what levels, are taking sick leave, early retirement, or compassionate leave? Which grades of employee are taking what periods of sick leave or early retirement, and what are the causes of this? At current rates of sickness, early retirement and death in service, how many years of work might be expected from each year of training or unit cost of training? At which points in the organizational process is it clear that unexpected absence, early retirement or death in service will affect the smooth operation of the enterprise?

| ACTIVITY | JUSTIFICATION | OUTCOME | RESOURCES | CHALLENGES AND ASSUMPTIONS |
|--|--|---|--|---|
| 3. Detailed diagnostic assessment | To define and cost the impact of vulnerabilities that have been identified | Establish baseline for measuring future productivity/ sustainability and/or organizational growth | Outcomes of steps 1 and 2 above | The organization has come this far in its analysis and still believes that it has a role, a potential market and an effective workforce |
| 4. Environmental survey | To quantify the potential market(s), agree strategies for, and risks involved in, continuing in same market, expanding into other markets or ceasing to operate in this market | Agreed strategic objectives, targets and performance standards | Paper/time Consultants and other specialists | It is assumed that the previous steps have been completed |

Results of the audit

Between 1996 and 1999, HIV/AIDS-related morbidity and mortality increased among the Debswana workforce. The company hospitals recorded an increase in the number of patients with HIV-related conditions while, in the workplace, there was increasing anecdotal evidence of workers going absent or underperforming because of HIV/AIDS. It was at this stage that the company took the bold decision to undertake a seroprevalence survey among the workforce. This was practicable because the first saliva-based HIV tests were becoming available at that time, thus avoiding the need to take blood.

However, worker and union cooperation in, and understanding of, the process was absolutely fundamental to its success. For this reason, the study protocols were discussed extensively with the employees and the unions. The company made it clear that, as well as giving a picture of the HIV prevalence rate, the results would assist the company in determining what form of treatment it could and should provide to its infected employees and their dependants. Because HIV is transmitted between sexual partners and from mother to child, the company recognized from the start that it could not offer treatment only to its employees but would have to make it available to some dependants and domestic partners.

Dr Clive Evian, of AIDS Management and Support, was contracted to conduct a prevalence survey. The survey used a laboratory-based HIV ELISA saliva test to determine the HIV status of each employee tested. The test was based on a few millilitres of saliva collected from participating employees, which were refrigerated and later analysed at the laboratory.

The results of the study were completely anonymous and unlinked to the employee. The information that appeared on the specimen was the employee's job band and age. Union officials were encouraged to observe the collection process to ensure anonymity of the study. There was no attempt to collect a determined sample size; rather the aim was to collect as many specimens as possible from each operation, and arrangements were made to cover all the shifts.

The study was completed in May 1999. There was a remarkable degree of cooperation from the workforce, with a participation rate of 74.6%. Some people were on annual leave and others were on sick leave. Had this not been the case, the participation percentage of the workforce would have been even higher. Given that some were on sick leave, it is possible that the sample slightly under-represented the number of people who were HIV-positive.

Each employee marked the sample with their age and, except in the case of Botswana Diamond Valuing Company (which is a very small unit with some very specialized and easily identifiable individuals on its pay roll), their job band. No other information was collected. The results of the serosurvey are shown in Table 8.

Table 8: HIV prevalence by operation and grade

| Operation | Total | A: Band % HIV+ | B: Band % HIV+ | C: Band % HIV+ | D: Band % HIV+ | E/F: Band % HIV+ |
|-------------------|-------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| Head office | 16.9 | 12.5 | 21.4 | 10.5 | 20 | 25 |
| Letlhakane | 25.9 | 30.6 | 25.6 | 27.8 | 33.3 | 0 |
| Orapa | 27.5 | 30.5 | 30 | 24.9 | 13.2 | 0 |
| Jwaneng | 32.2 | 31.8 | 33 | 30.8 | 21.9 | 33.3 |
| BDVC | 27.4 | | | | | |
| Total/mean | 28.8 | 30.9 | 30.7 | 27.6 | 19.3 | 18.8 |

Source: Evian Report, May 1999, Table 3.

Note: Debswana subsidiaries TMC and Morupule were not included in the sample.

These results were shocking. Average HIV prevalence among all employees stood at 28.8%, with the highest rates occurring at the Jwaneng mine and the lowest at Head Office. Considered by job band, prevalence was highest in bands A and B (the bands with the lowest skill requirements) and among the 30–34-year-old age group. As this was virtually the same prevalence as that found across the country at that time, it indicated that the AIDS education campaigns instituted by the company had had no more or less impact than the national campaigns.

These findings led Debswana management to decide that urgent action was required. The Group Human Resources Manager was immediately mandated to investigate the situation and make recommendations as to how to respond. The result was the institutional audit.

It was at first thought sufficient to do the audit only in the three mines, Head Office and BDVC, as it was these units that had participated in the initial prevalence study. However, in response to certain internal changes in company structure and organization, it was later decided to include Morupule and TMC in the audit to ensure that they would benefit immediately from any subsequently developed strategies.

The audit process began with a two-day workshop in September 1999 in Gaborone with heads of operating units. This meeting explained the processes and established the goals and tasks in consultation with appropriate management. On the basis of this, the Debswana staff set out to collect data on the following:

Personal impact, including:

- sick leave absenteeism and compassionate leave
- ill-health, retirement and death data
- training, recruitment and payroll costs

Health impact:

- Health-care costs, bed utilization rates (the company has its own hospital), disease profiles

Critical posts:

- identification of posts that were critical to the company's performance and of where replacements could be difficult.

Data problems

It quickly became clear that data collection was not going to be straightforward. The problem was that the company's information systems were not uniform across its operations, were not always well adapted to its needs and, in particular, could not collect data relevant to a HIV/AIDS audit. For example, definitions of absenteeism varied across operations and could be measured in a number of ways. Measures of productivity were even more difficult to calculate. None the less, a preliminary report using rough-and-ready methods was put together by December 1999. This showed a number of clear trends but also highlighted the gaps in the data.

It took a further seven months to carry out additional data collection and analysis, and to hold discussions with the stakeholders. While this was longer than hoped or anticipated, one very important lesson was learned from the process: a slow, inclusive study will be accepted more readily than one that is quick but does not make stakeholders feel involved. So, an important principle became clear: inclusion should be the watchword of any HIV/AIDS audit and this may mean that it requires more time. Furthermore, data collection and cleaning were often sensitive, requiring considerable diplomacy as inter-departmental and inter-unit interests were threatened by the need to standardize and ascertain the accuracy of data. In brief, the audit revealed minor work-a-day inadequacies in systems and performance, which are normal and tolerable in any organization. In the audit process, these were thrown into sudden sharp relief.

This work was carried out by Debswana staff, which meant they had a grasp of the strengths and weaknesses of the MIS and a clear understanding of the goals of the audit. During this period, a lot of conceptual clarification occurred.

Presenting the findings

When the audit report had been completed after almost 12 months' work, it was presented at a two-day workshop to senior staff of the company's operating units.

The goals at this workshop were to:

- share the results of the audit and facilitate discussion on areas of vulnerability and implications for costs, human resource policies and healthcare provision; and

- facilitate discussion of treatment. This meant addressing the question of what treatments the company should provide; in particular, should ARVs be available and, if so, to whom—to the employee, to their families or even more widely?

The following key issues were identified as requiring clear specification if an effective HIV/AIDS strategy were to be developed:

- **Group HIV/AIDS strategy:** Without such a strategy, the company could not survive. There was a need for an immediate plan of action.
- **Development of a group information system:** The MIS would need to be restructured to enable the company to extract accurate and reliable data in relation to HIV/AIDS prevention, treatment and impact mitigation. The medical database would have to interface with financial and human resource-related data.
- **Provision for future costs:** The company had to be aware of the currently evident and likely future costs, and to be in a position to cope financially. It was clear that costs would have to include antiretroviral therapy for employees.
- **Enhancement of manpower planning:** This was important for the long-term survival of the company. It would have to be all-inclusive, encompassing company training policy, and be cost-conscious.
- **Lifestyle training:** This would be part of the prevention programme and would have to involve educating employees in ways that were innovative and that differed from current practice. In particular, it was felt that lifestyle training had to reach out to the communities and contribute to the creation of a culture that would encourage more open communication about sexual relations.
- **Restructuring employee benefits:** This was a key issue as it was clear that employee benefits would need to be structured in such a way as to afford flexibility and to take account of the company's training strategy. One possibility was to give employees the choice between a gratuity and a pension, depending on their particular needs. This would require a proper system of benefit management, and some system that gave people an incentive to remain seronegative.

- **Medical issues:** Treatment, testing and counselling would all depend on affordability to individuals and sustainability at the company level. It was agreed that people should be encouraged to go for voluntary testing.
- **Institutional capacity and capability:** The company would need to establish policies and instruments that would enable it to continuously examine the adequacy and the availability of its resources (both human and financial) to cope with the impact of the epidemic.
- **Legal issues:** There was a clear need to sensitize managers and employees to the legal issues relating to the management of AIDS in the workplace.
- **Productivity issues:** The company had to establish procedures to enable it to monitor productivity and thus identify AIDS-related declines. This would involve the development of new data collection and analysis systems.

In response to this plethora of issues, three working groups were established. They had the following briefs:

Group 1: To develop guidelines on critical/key organizational functions and to facilitate production of a list of critical jobs for each operation.

Group 2: To review employee benefits (including ARV therapy) and recommend ways of restructuring these to reduce HIV/AIDS-related impact.

Group 3: To develop a general strategy for responding to HIV/AIDS.

The first attempt to identify the critical posts was of particular interest. Each operating section of the company was initially asked to carry out the exercise prior to the meeting. Each came up with a different and very long list. It was interesting to note that each list included the positions of those who compiled it! It was clear that the concept of what was **critical** needed to be explored. As the discussion progressed, it became clear, perhaps not surprisingly, that criticality did not necessarily refer either to the level of education required or to the managerial position in the organizational hierarchy. For example, a visit to one of the mines, and discussion with the senior management, revealed that, in these operations,

the critical posts were held by the drivers of the trucks that took the raw material from the mine to the crushers. These huge trucks, each with a capacity of 170 tonnes, require some skill and ideally operate 24 hours a day. In this mine, there were 20 trucks and 80 people able to drive them. It became clear that each of these relatively poorly-paid drivers was highly skilled and that their role was critical to the organization.

Recommendations to the Executive Committee

The workshop developed recommendations for the Debswana Executive Committee (Exco). It was at this meeting that final decisions were taken as to the company's response to the epidemic. The workshop and meeting with Exco were held in August 2000. The main findings presented to the Executive Committee were as follows:

- Debswana had to move rapidly on the formulation of a strategy;
- decisions needed to be made on the provision of ARV drugs, including at what level, to whom and by what means;
- the critical functions had to be established and group-wide planning for short- and long-term replacement undertaken; and
- the management information system needed to be elaborated and refined.

Debswana's Executive Committee accepted all of these points. In addition, it agreed to the following:

- the issue of HIV/AIDS and its effects on operations should be included as a regular item for consideration in the company's quarterly audits;
- the company should develop standards for AIDS management that were similar to ISO 14000;
- an 'AIDS test'—an examination on individuals' knowledge of HIV/AIDS before employment and promotion to certain levels—was to be put in place;
- Debswana should use its market position to insist that its contractors adopt standards of quality assurance with regard to their own policies in relation to HIV/AIDS (thus contractors would be expected to follow good practice with regard to their own workforce);

- the national situation and Debswana’s role in shaping the debate should be monitored on an ongoing basis—a necessary measure because of the very significant role played by the company in the economy of Botswana;
- a HIV prevalence survey by occupation should be repeated every two years with a view to enhancing human resource planning; and
- there was a need for an urgent decision concerning pre- and post-employment testing—particularly important since Debswana’s training programmes were part of the development of a national skill base.

6. The lessons learned

Providing antiretroviral drugs

The decision to assist employees in obtaining antiretroviral therapy was not dependent on the institutional audit process alone. In order to move to a final decision on whether the Board should prove ART, the company had also commissioned two actuarial studies to provide:

- a. the detailed costs of providing antiretroviral therapy to Debswana employees allowing for staff subsidization;
- b. the legal entity, which Debswana could establish to fund and administer an AIDS-treatment protocol;
- c. the financial impact of AIDS on the benefits provided by Debswana to its employees;
- d. the extent to which these costs would change, if the company provided its employees with ART; and
- e. the extent to which it is economically justifiable for the company to fund ART for employees.

The major finding was that it would cost Debswana and its subsidiaries 11.9% of the total payroll to provide ART to employees and their spouses, if drugs were purchased at retail prices, and if the total cost was borne fully by the company. This cost could drop to 10.7% if HIV-positive employees contributed 10% of drug costs.

With respect to the funding vehicle, the study recommended the creation of a trust fund, which would be managed by a Board of Trustees, made up of employer and employee representatives. The function of the trustees would be to manage costs relating to the provision of drugs and the monitoring of viral loads and CD4 counts.

The management of Debswana believes that the provision of ART is a business imperative because it results in healthier individuals who are able to remain productive for longer and to support their families. It results in a decrease in absenteeism/sick leave, a decrease in hospitalization and the attendant costs, and a reduction in rehiring/replacement and retraining costs, as well as a reduction in group life and disability costs.

Despite the fact that the financial cost of providing ART exceeds the cost saving to the company, the Executive Committee agreed to recommend the following to the Board:

- The strategy of extending productive lives through the intervention of antiretroviral therapy.
- A policy of assisting HIV-positive employees and their **one legally married spouse**, as nominated by the employee, to afford a minimum of dual therapy starting from the asymptomatic-HIV stage and triple therapy at the symptomatic-AIDS stage on a co-payment basis. The recommended co-payment by the employee is 10% of drug and monitoring costs. Employees on medical aid schemes would benefit from this subsidy once their entitlement on the medical aid scheme was exhausted.
- The creation of a trust fund to manage the provision of the drugs and of the monitoring costs for viral loads and CD4 cell counts.

The above recommendation, which could not be justified by financial considerations alone, was seen as part of a total strategy to care for and support HIV-infected employees and to improve their quality of life. It was also seen as a way of mitigating the human and systemic costs, which are more difficult to quantify. These costs include a decline in morale, motivation, workforce performance and cohesion, as well as the loss of organizational memory, and the psychological impact of increased illness and death.

It is important to note that the company decided not to provide the drugs free of charge, but that employees would have to pay 10% of costs. This would ensure that they had a vested interest in pursuing the programme.

The mother-to-child transmission prevention programme is available to all free of charge through the government public health system. The company has also made it clear that it will provide therapy to the one registered spouse. This is consistent with provision of other benefits. The company will not provide ARV treatment to employees' children.

In March 2001, the Board approved the proposed policy and the funding vehicle. The provision of ART is done through a disease-management programme to ensure that treatment is started at the right stage of the disease, drugs are taken in the right combinations, medical personnel receive appropriate training and there is constant monitoring of patients to ensure adherence to treatment.

The programme started on 14 May 2001 and seven patients had registered by the end of that month. By the end of April 2002, 190 patients had registered for the programme. Of these patients, 148 started treatment and 42 only required monitoring. Of those registered, 149 were employees and 41 were spouses. It is encouraging to note that 27 employees have registered on the programme with their spouse.

The majority of patients seem to register when their immune system has been severely impaired; 56.2% of the patients registered at the symptomatic-AIDS stage.

The monitoring of patients is done by telephone and is going well. Of registered patients, 95% are being tracked. There were only two defaulters who are receiving counselling. The rest are adhering to treatment. Only one person has dropped out of the programme and five have died since its inception.

The rate of registration is a function of knowing one's status and an understanding of the benefits of antiretroviral therapy. The challenges of the programme in this area are to aggressively sell voluntary counselling and testing (VCT) and education on antiretroviral drugs so that employees can make informed decisions. Once people know their status and the benefits of the treatment, the rest is free choice.

The notarial deed of trust has been completed and so the trust fund is established. The funding rate has been revised following the significant drop in the cost of antiretroviral drugs in March 2001, as well as the drop in the company HIV prevalence rate from 28.8% in 1999 to 22.6% in 2001. The funding rate is now at 3.9% of the payroll, following the drop in prevalence rates and drug prices.

Contractor quality assurance

Following the recommendation made during the institutional audit workshop that there should be contractor quality assurance regarding HIV/AIDS, the company adopted as a strategy the engagement of stakeholders who are important to the success of the company's HIV/AIDS programme. This draft strategy had been developed and adopted within two months of the August 2000 meeting of the Executive Committee.

Developed and accepted were policy guidelines that required all companies wishing to conduct business with Debswana to “actively support Debswana’s policies and efforts in the promotion of health and safety and, specifically, in the fight against the spread of HIV/AIDS”. The guidelines stipulate what should be covered in a workplace policy on HIV/AIDS, and the basic medical facts and workplace issues that should be in a workplace education programme. They also set out what facilities and structures should be provided for employees, such as opportunities to attend inductions, and to visit the clinic during working hours, and the provision of free condoms at the workplace.

Debswana also requires participation by contractors in the multisectoral AIDS committees and peer education structures, and reserves the right to audit these companies for compliance with the policy. Following publication of the policy early in 2001, contractors who operate in the mines on a semi-permanent basis participated in the prevalence survey conducted by the company. This was important as it showed that contractors had significantly higher rates of HIV prevalence across all operations. The total prevalence rate throughout the company was 24.4%; among permanent staff it was 22.6% and among contractors 28.4%.

This means the policy is important as it enables Debswana to use its influence to make a difference outside of its immediate boundaries. In addition, it is targeting employers whose employees are clearly more susceptible to infection and need additional attention. The policy is used as part of the documentation for tendering procedures, which ensures that any company wishing to do business with Debswana has to be ‘HIV/AIDS-compliant’.

Process for identifying critical posts

One of the major outcomes of the audit was the development of guidelines for the identification and analysis of the critical posts, which are core to the business of mining and processing diamonds as well as to the busi-

ness of each subsidiary company. The identification of these positions will assist in targeting them for specific risk-reduction strategies, including recruitment, training manpower and succession-planning strategies. The outcome of the exercise, which was completed at the end of October, is that, out of the 5814 positions in the Debswana mines and subsidiaries, 1566 positions (or 26.9% of the positions) were identified as critical. The majority of these critical jobs at all operations were in the B band.

The starting point in the process of critical post identification in Debswana was the definition of the business objectives for all operations except Head Office. It was out of the business objectives that the critical paths were derived, together with their functions.

The actual identification of the critical posts started with categorization of all the organizational functions into the three broad groups, as follows:

Important functions—those that are operationally necessary for the efficient running of the organization;

Essential functions—those that provide service support or are a legal requirement in an operation; and

Critical functions—those that are core to the critical path of the business process.

To qualify for criticality, functions were subject to a ‘critical post selection instrument’. This was the first stage of the test. The instrument involved three questions, as follows:

Does the function have a high potential to:

- stop production?
- disrupt the production process?
- have an impact on the quality of the product?

If the answer was ‘yes’ to at least one of the above questions, the post qualified as critical.

The second stage was to test for the level of criticality with an understanding that all the posts that passed the above test were critical, but did not necessarily have the same level of criticality. A ‘post evaluation form’ with some predetermined critical factors was used for this purpose. Each of the critical factors was multiplied by a ‘recovery time

weighting’, which was the degree to which it was difficult to resume normal duty when people performing that particular duty were away.

The level of criticality of the posts was the summation of the product of critical factors and the recovery time weightings.

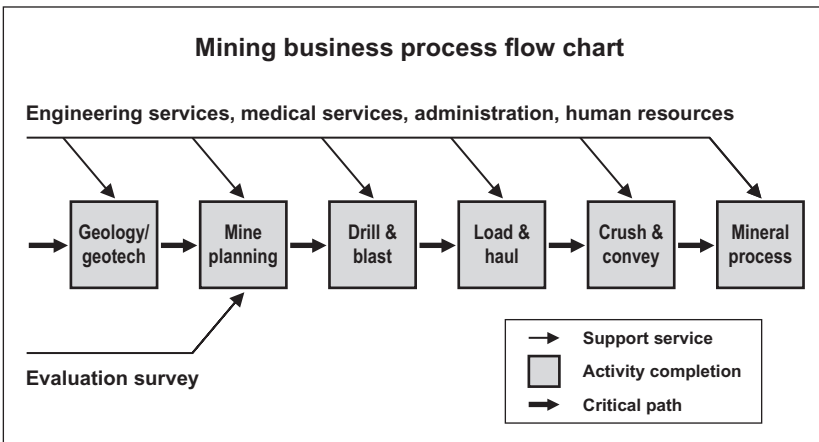
Example: Debswana Diamond Mining critical path

The path was derived in accordance with the business objective: ‘To mine and produce diamonds’. It was used to determine the critical posts at the Debswana diamond mines. The path essentially describes the process from the time potential mining spots are identified to the time diamonds are transported to the Botswana Diamond Valuing Company (BDVC).

The starting point is the sampling and mineralization by geologists. Mine planning is the next function whereby the designing of mine plans takes place. After approval of the mine plan, it is handed over to mining operations for actual implementation. This is where the drilling, blasting, loading and hauling functions happen. Next come the crushing and conveying functions and the last function is mineral processing that includes screening, washing and separation of the diamonds from waste. Diamonds are then transported to a diamond valuation facility where they are sorted according to quality and size.

Mining operators carry out the majority of the functions in this path.

Diamond mining critical path



It is important to note that all jobs in an organization are required; most of them are important and some are a legal requirement. The critical jobs, which mainly comprised about a quarter of the total establishment in Debswana, are core to the business objectives and they can only be found in the determined critical paths. However, for an organization to run efficiently, the critical jobs alone are insufficient, and important and essential jobs are necessary to give a complete and functional organizational picture.

The new HIV/AIDS strategy

Prior to the year 2000, HIV/AIDS programmes came under the strategy on health and safety. The institutional audit identified the need to develop a separate strategy on HIV/AIDS in order to give the issue the attention it deserved. A task team was put together to develop the strategy, which was embraced in the corporate strategy during its review in October 2000. The following mission and vision were adopted:

Mission: to reduce the impact of HIV/AIDS on our employees, their families and the company through the prevention of new infections, the care and support of those infected and the containment of costs.

Vision: to become the global benchmark company in the fight against HIV/AIDS in the workplace.

Furthermore, six strategies were identified:

Epidemic containment—a strategy for prevention of new infections among employees and their families, with a specific focus on youth and the community.

Economic impact containment—a strategy for minimizing the financial impact of HIV/AIDS on the company to ensure its survival. This is done through proactive planning for the various HIV/AIDS-associated impact indicators such as deaths, sickness, ill-health retirements, and targeted succession planning, particularly for those jobs that have been identified as critical to the mining and recovery of diamonds, which is the core business objective.

Living with AIDS—a strategy for minimizing the negative impact of AIDS on employees living with the disease, through enabling policies and by improving the quality of their lives and their productivity. The emphasis is on the promotion of a healthy lifestyle through a balanced diet, physical,

mental and spiritual well-being and the provision of antiretroviral therapy to employees and their spouses who are infected with the virus.

Stakeholder engagement—a strategy for engaging those stakeholders who are important to the success of the company’s HIV/AIDS programme by setting standards and guidelines for such stakeholders to follow, and through collaboration and partnerships.

Evaluation measurement and monitoring—a strategy for the regular evaluation of the effectiveness of the company’s HIV/AIDS programmes and the constant measurement and monitoring of HIV/AIDS impact indicators such as deaths, absenteeism, ill-health retirements, costs and benefits.

Communication—a strategy to support the HIV/AIDS programmes and to improve awareness of these and other initiatives internally and externally with relevant stakeholders. This strategy is also aimed at promoting the vision of Debswana becoming a global benchmark company in the fight against AIDS in the workplace.

Development of an AIDS-competence standard for managers

The management of AIDS is seen in Debswana as an intrinsic part of the management of human and financial resources. All managers are required to have a level of competence in managing costs and human resources, therefore a level of competence in AIDS-related issues for all managers is a natural part of this. The need to develop AIDS-competence standards for managers was identified during the institutional audit workshop. Although these standards have not yet been implemented, the following areas of competence have been identified and may be slightly amended/merged following the testing exercise that will take place before implementation:

- a) medical facts and basic epidemiology and data sources;
- b) HIV epidemic determinants;
- c) impact of HIV/AIDS on the individual, the company and society;
- d) HIV/AIDS workplace issues; and
- e) Debswana’s policies and practices on HIV/AIDS and the rationale behind them.

Implementation of these standards will be carried out as part of the 2002 objectives and the standards will be used during the selection process to

determine the competence of new managers joining the organization at particular levels.

Development of a HIV/AIDS standard

Concurrent with the activities in Botswana, a new initiative was being developed in South Africa, which fits neatly into the Debswana goals and outcomes. This was the development of a HIV/AIDS standard—the AIDS Management Standard Initiative (AMSI) by a group of students at the University of Cape Town.

AMS refers to a standard for corporate governance that will ensure a systematic way for businesses to address the AIDS pandemic. Conformance to the criteria set out in the standard will indicate a company's commitment to an AIDS policy in the workplace and will, in the long term, help decrease the spread of HIV/AIDS in the population.

Similar to the ISO series of standards, the AMSI will provide a framework for laying out corporate AIDS strategies. The ultimate intended effect of the AMSI will be increased productivity from an informed workforce, and the minimization of the damage caused by doing nothing. Accreditation of an AIDS programme by an independent audit will be a badge of sound management practice showing a public image of commitment to maintaining shareholder value. AMSI is working towards achieving a wide-ranging mandate, which will give the AMS legitimacy and credibility.

Once an independent body has audited conformance, accreditation will be given in the form of a brand, which the institution will be encouraged to display on its promotional and other material. This will help spread awareness through the market, and will also indicate to investors, potential business partners and, indeed, all stakeholders, the standards of quality and preparedness that exist within the company.

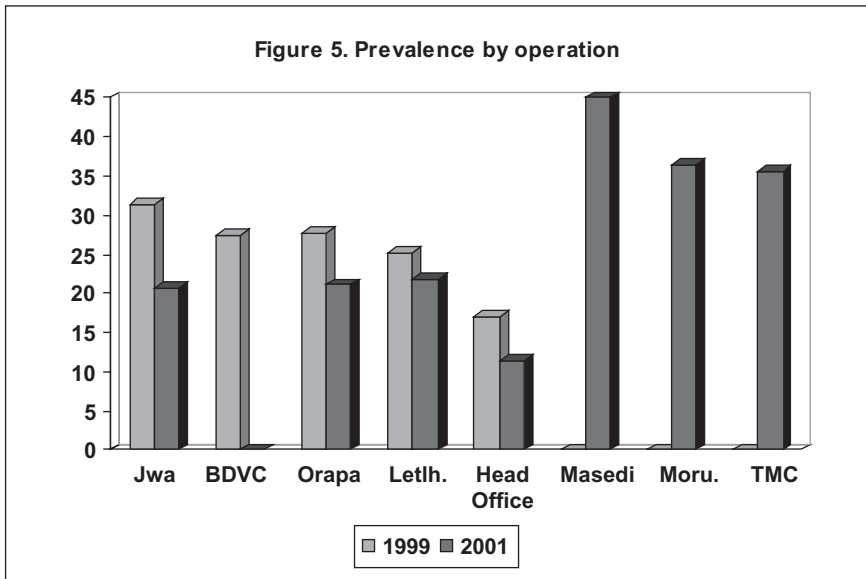
The AMS provides companies with effective and practical measures to facilitate:

- 1) the understanding of all directors of the effects of HIV/AIDS on their company; 2) risk analysis by the company in order to ascertain the extent of HIV/AIDS' effects on it; 3) the strategic re-positioning of the company as a whole, in light of the pandemic's effects; and 4) reporting to all stakeholders on the measures taken and progress thereof.

The standard could become not only a way to deal with the problem, but also a source of competitive advantage for the company and a benchmark for investors.

7. An update of the 2001 survey

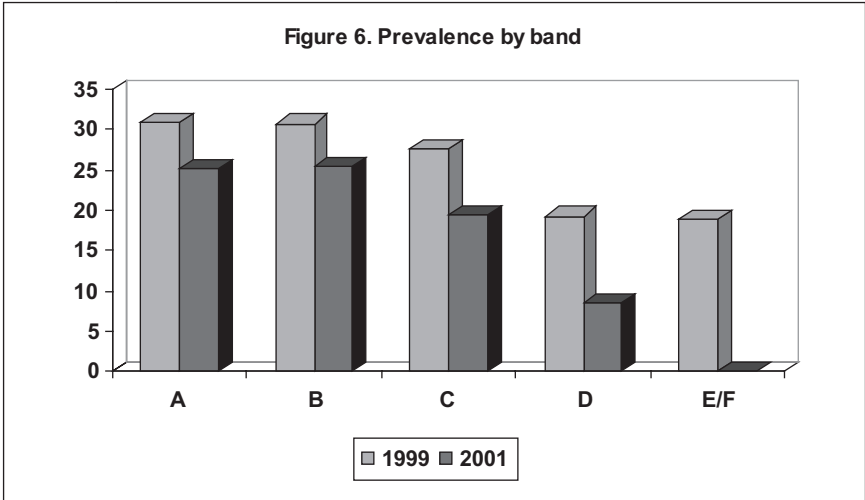
Prevalence surveys were conducted in June and July 2001 at Head Office, at the Jwaneng, Orapa and Letlhakane mines and, for the first time, at Morupule Colliery, Teemane Manufacturing Company and Masedi. An effective 74% of the total workforce at these operations participated in the survey, representing 81% of employees on duty. Due to a labour dispute, BDVC participated but at a low rate (23%). Their results were therefore not taken into account, to avoid distortion of the overall result.



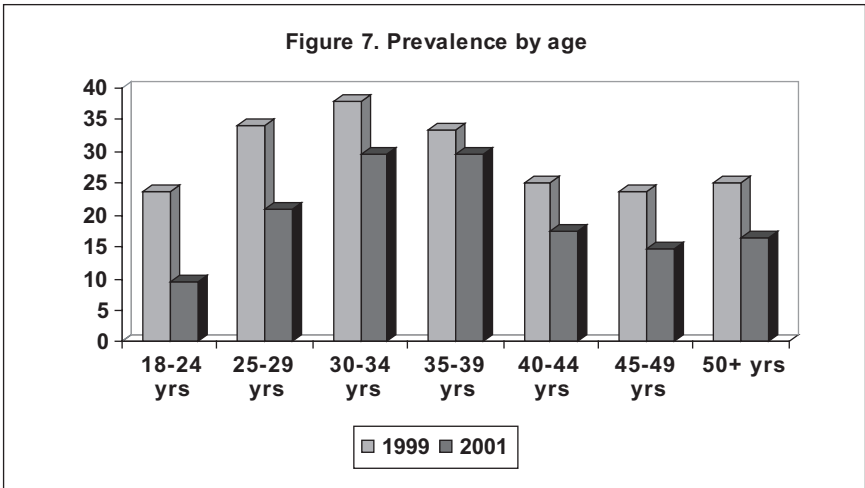
Compared to the 1999 results, there was a decline in prevalence of 6.2% from 28.8% in 1999 to 22.6% in 2001. However, the three operations that participated for the first time all had prevalence rates that exceeded 30%. These operations are the subsidiaries and, unlike the main diamond mine operations, they have not had a long history of AIDS awareness and education.

Figure 5 shows the HIV prevalence survey results by operation.

The overall band-specific rates were also lower in 2001 than in 1999. In 1999, the A and B bands' prevalence rates exceeded 30%, whereas they were in the 20s in 2001, as shown in Figure 6 (see next page).



The same pattern was observed in all age groups, as shown in Figure 7.



The reasons for this decline in HIV prevalence, while encouraging, are not clear, and at least one more round of data would be needed to establish clear trends. The data require further analysis. However, provision of ARV drugs is unlikely to have influenced trends; it is much more likely that the open atmosphere, management concern and continued interventions are all having an influence.

8. The way forward: what can other organizations and companies learn from the Debswana experience?

Debswana's institutional HIV/AIDS audit conveys a number of important lessons. These not only apply to commercial organizations but also have relevance for those operating in the NGO sector and, perhaps most importantly, for governments. Here we summarize and briefly discuss them, indicating the way forward.

- An institutional audit cannot be considered as a simple accounting exercise. It may use some of the techniques of accountancy or economics (for example, discounted cash flows, cost-effectiveness and cost-benefit analysis), but its concerns are much broader than these.
- An effective institutional audit requires extensive consultation with the workforce. Workers must be assured that the audit is being undertaken in their interests as well as in the interests of the organization.
- The audit is not a mechanical process following a formula. Experience with a number of organizations in addition to Debswana has clearly demonstrated that each institutional HIV/AIDS audit is unique. Its concerns and processes reflect the particular capacities, capabilities and activities of each organization.
- The process of carrying out a HIV/AIDS audit is almost as important as the results. In some cases, the process may be even more important than the outcome to the extent that organizational managers could not tackle the problems identified unless they had undertaken the audit together. Thus, the audit itself has important educational and team-building functions.

The activities of an organization—what it does and its position in the market—will inevitably influence its response to the results of a HIV/AIDS audit. De Beers and the Government of Botswana own 50% of the Debswana company. As a mining operation, it is tied to a particular geographical area. It does not have the option of responding by re-locating. Another company without those specific characteristics might decide that the additional costs associated with HIV/AIDS response outweighed the benefits. It might relocate its activities to somewhere the HIV/AIDS epidemic was not a problem. In addition, Debswana's close association with government has meant that it is perhaps more inclined

to take the question of workers' welfare more seriously than if it had been a straightforward private sector company.

Debswana occupies a very important place in the local economy and can therefore persuade its subcontractors and suppliers to abide by good practice. Other companies operating in different markets may not be in a position to impose such conditions.

Debswana was able to adopt a generous policy towards ARVs because the proximity of South Africa meant that the attendant costs were less than they would have been had the company been operating in a less favourable and less well-endowed environment. In practice, Debswana has been able to outsource ARV treatment and supervision to the private sector in South Africa. Because of its size and influence, the company has also been able to negotiate good drug prices with some major pharmaceutical companies.

The lessons for other companies from this experience are surprisingly simple. They include the following:

- It is difficult to measure and monitor the impact of HIV/AIDS on a company unless there is a good management information system.
- It is only useful to know HIV prevalence rates in the company if the information is going to be used to achieve the following practical goals:
 - to plan for human resource needs;
 - to assess benefits; and
 - to examine treatment options.
- It is not enough to look at costs; an organization must also look at critical posts—those where lack of experience, adequate numbers or high levels of absenteeism will mean that efficient operations will be compromised.
- The 'criticality' of posts may not be easily predicted and their identification may involve some very difficult reflection.
- A company does not operate in isolation; it needs to look at its relationship with other companies, the government and the community and to consider how its decisions in terms of a HIV/AIDS response affect, and are affected by, the wider environment.

- There is a need for commitment to the process at all levels of the company and this is particularly important if an audit's findings are to be implemented effectively.
- The best way to ensure that a company 'owns' the results of the audit is for company personnel to undertake the work rather than management merely commissioning a report by outside consultants. This was particularly clear in the case of Debswana where the collection and analysis of information involved widespread participation by people throughout the company. This meant that when the audit revealed particular problems (for example, in relation to the company's MIS), the rationale for change was widely understood among middle-level management.

Although the institutional audit was an important activity, it did not happen in isolation. Debswana was already engaged in thinking about AIDS and developing response policies in parallel with the auditing process.

To summarize, the outputs from the Debswana HIV/AIDS audit were as follows:

- development of a company-wide HIV/AIDS strategy;
- development of guidelines for identification of critical posts;
- review of employee benefits and recommendations as to how these could be restructured to reduce HIV/AIDS-related impact;
- development of a strategy for providing ARV drugs to the workforce;
- a clear strategy regarding pre- and post-employment testing, particularly with regard to the company's programme of internal training; and
- revision of the MIS to take AIDS into account.

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The Joint United Nations Programme on HIV/AIDS (UNAIDS) is the leading advocate for global action on HIV/AIDS. It brings together eight United Nations agencies in a common effort to fight the epidemic: the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the United Nations International Drug Control Programme (UNDCP), the International Labour Organization (ILO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO) and the World Bank.

UNAIDS both mobilizes the responses to the epidemic of its eight cosponsoring organizations and supplements these efforts with special initiatives. Its purpose is to lead and assist an expansion of the international response to HIV/AIDS on all fronts: medical, public health, social, economic, cultural, political and human rights. UNAIDS works with a broad range of partners—governmental and NGO, business, scientific and lay—to share knowledge, skills and best practice across boundaries.

Produced with environment-friendly materials

In many respects, Botswana is Africa's success story. It is peaceful, democratic and prosperous. But it also has the worst AIDS epidemic in the world, with an adult prevalence rate estimated at 35.8%. This case study describes the response to this tragedy (which threatens to reverse all the country's gains of the past decades) of one of the most important companies in Botswana—the Debswana diamond-mining company. The company started with an AIDS education and awareness programme, appointed full-time AIDS programme coordinators and developed a HIV/AIDS management policy. It conducted an institutional audit of susceptibility and vulnerability to HIV/AIDS, which is reported in some detail, together with findings and lessons learned.

Debswana's work on HIV/AIDS represents a ray of hope in a bleak situation and has much to teach the private sector in the region and, perhaps, globally.



Joint United Nations Programme on HIV/AIDS

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