MINING, MIGRATION AND MISERY: EXPLORING THE HIV/AIDS NEXUS IN THE FREE STATE GOLDFIELDS OF SOUTH AFRICA[1]

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1. INTRODUCTION

Over the past few years a growing body of literature has explored the link between patterns of HIV/AIDS in South Africa and the system of migrant labour which is inextricably linked to the mining industry (Horwitz 2001; Jack 2001; Lurie 2000; Pelser 2003). A historical look at patterns of sexually transmitted diseases (STDs) reveals a complex network of sexual relations in which migrants and their partners are at a higher risk of contracting HIV/AIDS and other sexually transmitted diseases than other couples. Research has also shown that migrant workers in South Africa and elsewhere, probably as a result of their living and personal conditions while away from their homes, are particularly inclined to participate in risky sexual behaviour. The system of men moving away from their families for long periods, is thus seen by some analysts as creating a geographical network of sexual relations in urban and rural areas, a market for prostitution in towns, as well as conditions on the mines and in the hostels which encourage and facilitate the spread of HIV (Cf. Lurie *et al*. 2003; Zuma *et al*. 2003: White 2003; Lagarde *et al*. 2003).

In recent years, a second dynamic in (particularly, gold and diamond) mining environments - the significant downscaling of mining operations and the accompanying extensive retrenchments resulting in large-scale unemployment and poverty - has become part of the cycle entrenched by labour migration and HIV/AIDS. Downscaling of mining operations and wide-ranging retrenchments

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since the mid-1990s have ignited and propelled staggering unemployment and poverty figures in many once prosperous mining environments. One such South African mining environment which has been rigorously affected by economic changes in recent years, is the Free State Goldfields. Simultaneously, and almost concurrently with the economic demise of the Goldfields, HIV prevalence rates in the Free State Goldfields have soared to new heights (see sections 4 and 5). This situation has given renewed prominence to the link between the dynamics peculiar to mining environments on the one hand, and the spread of HIV/AIDS, on the other. The purpose of this article then is to explore the intertwined dynamics of labour migration, unemployment and poverty as breeding grounds for the spread of HIV/AIDS within the context of the Free State Goldfields. It is, however, important to note that the article does not suggest a statistical or cause-effect relationship between poverty and HIV/AIDS. In other words, the article does not put forward an argument in favour of poverty being the cause of HIV/AIDS. Rather, it is demonstrated that conditions of poverty and unemployment (such as in the Goldfields) are associated with increased levels of HIV/AIDS. The argument draws upon comparative economic, social, demographic and health statistics of the Free State Goldfields for the past six to eight years. Using the case of the Goldfields as vantage point, the article further argues that an integrated poverty relief programme is pivotal in a comprehensive response which is commensurate with the seriousness of HIV/AIDS. As starting point, the current status of HIV/AIDS in the Free State is briefly profiled.

2. A PROFILE OF HIV/AIDS TRENDS IN THE FREE STATE

As elsewhere in South Africa, HIV prevalence rates in the Free State too have increased dramatically since the early 1990s. Table 1 shows that, with the exception of the year 2000, the Free State has consistently ranked among the top three provinces with the highest HIV prevalence rates in South Africa. Most data on HIV/AIDS in South Africa are obtained from the national sentinel surveillance surveys of antenatal state clinic attendees that have been conducted since 1990. On the question as to whether data gathered in this way (i.e. by means of sentinel surveillance systems) are representative of the broader situation in South Africa, population-based studies in several countries suggest that antenatal data, if anything, tend to *underestimate* the HIV prevalence among sexually active women (Whiteside and Sunter 2000:50). There is evidence that HIV may depress the fertility of infected women, which could mean that HIV-infected women are underrepresented among antenatal care patients and that the observed rates amongst the latter should be adjusted upward. Notwithstanding the fact that the quality of antenatal surveillance systems is often erratic and inconsistent from site to site and from one year to the next, these surveys do provide a vital look at the course of the

epidemic. Yet, it is important to bear in mind that it is almost impossible to obtain wholly accurate empirical data on the extent and impact of HIV/AIDS, whether on the national or the provincial level. Most of the information is derived from mathematical models which are based on statistical facts, and are plausible. Although the data thus offer a broad understanding of the extent of HIV/AIDS in the Free State, figures in the tables should not be viewed as being absolutely precise or indisputably accurate presentations of the extent of the epidemic. Notwithstanding the limitations of antenatal survey data, such surveys do allow researchers to track HIV prevalence in different provinces and across age groups – thus identifying trends over time and providing estimate prevalence levels for each of the important groups in the South African population.

By mid-2002, almost half a million people in the Free State were estimated to be living with HIV/AIDS, and in 2003 the Free State joined the provinces of Gauteng and KwaZulu-Natal with antenatal prevalence rates of more than 30%. The HIV prevalence rate for the total population in the Free State is projected at 15,6% for the year 2010 - a percentage which translates into more than 490 000 infected people (Table 2). Being one of the poorer provinces, the Free State will be faced with huge challenges to meet the health and related needs of such a large pool of HIV-positive people.

Table 1: Provincial and national HIV prevalence rates among antenatal clinic attendees (1998-2003)

Province	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
KwaZulu-Natal	32,5	32,5	36,2	33,5	36,5	37,5
Mpumalanga	30,0	27,3	29,7	29,2	28,6	32,6
Gauteng	22,5	23,9	29,4	29,8	31,6	29,6
Free State	22,8	27,9	27,9	30,1	28,8	30,1
North West	21,3	23,0	22,9	25,2	26,2	29,9
Eastern Cape	15,9	18,0	20,2	21,7	23,6	27,1
Limpopo	11,5	11,4	13,2	14,5	15,6	17,5
Northern Cape	9,9	10,1	11,2	15,9	15,1	16,7
Western Cape	5,2	7,1	8,7	8,6	12,4	13,1
National average	**22,8**	**22,4**	**24,5**	**24,8**	**26,5**	**27,9**

Sources: Compiled from Department of Health, 2001; 2003.

The 2003 population of the Free State (2,93 million) is projected to drop to 2,87 million by 2010 (SAIRR 2004) - a decline of 2,1%. This projected decline in the total population is largely the result of the impact of the HIV/AIDS epidemic, as manifested amongst others in the relatively sharp increases in the number of annual AIDS deaths (see Table 2) and the infant mortality rate in the Free State, but

can also be attributed to the fertility rate declining more rapidly than anticipated in earlier estimates (Pelser 2004). Table 2 shows that the death rate for the Free State is projected to increase by 33% during the period 2001-2011 - a trend which will no doubt fuel the current cycle of a rapidly declining population growth rate in the province. Compared with the other eight provinces, the Free State already had the highest crude death rate in 2001, and projections for 2011 show that the province will maintain this invidious position over the next few years (Haldenwang 2001).

Demographically, however, an increase in AIDS-related deaths and a rapidly declining fertility rate are not the only factors which will impact upon the Free State's population in years to come. Another factor which is impacting upon demographic change in the Free State, and which will no doubt further stimulate the projected drop in population numbers in the province, is the economic demise of the Free State Goldfields. The economic degradation of the Goldfields in recent years, is probably the single most important reason for the fact that more than 50% of the population in the Goldfields are living in poverty (Table 5), and has also resulted in a large-scale out-migration of people to other provinces in search of job opportunities (Table 6). These aspects are further dealt with in section 5.1.

Table 2: Estimated and projected impacts of HIV/AIDS on the Free State and South African population

Indicators	Free State	South Africa
Total Population		
-2000	2 862 088	45 078 805
-2010	2 871 268	47 392 059
-Increase 2000 to 2010	0,3%	5,1%
Annual population growth rate		
- 1996 to 2001	1,12%	1,52%
- 2001 to 2006	0,72%*	1,18%
- Decrease 2001 to 2006	-35,7%	-22,4%
Life expectancy at birth		
-2000	57 years	56 years
-2010	40 years	41 years
-Decrease 2000 to 2010	-29,8%	-26,8%
Death rate (per 1000 of the population)		
-1996 to 2001	11,7	9,4
-2001 to 2006	14,9	11,0
-2006 to 2011	15,6	14,1
-Increase 2001 to 2011	33,3%	50%

Table continues…

Table 2: Estimated and projected impacts of HIV/AIDS on the Free State and South African population (continued)

Indicators	Free State	South Africa
Total HIV infections		
-2000	398 627	5 263 841
-2010	491 547	7 252 801
-Increase 2000 to 2010	23,3%	37,8%
AIDS deaths (annually)		
-2000	10 067	139 009
-2010	55 899	779 098
-Increase 2000 to 2010	455,3%	460,5%
AIDS deaths as % of total deaths		
-2000	28,9%	26,4%
-2010	68,6%	65,7%
-Increase 2000 to 2010	137,4%	148,9%

Sources: Compiled from SAIRR, 2004; Statistics South Africa, 2003; Haldenwang, 2001.

A breakdown of the five district councils (DCs) in the Free State shows significant variations in the HIV prevalence rate of the five district municipal areas, with Motheo (DC17) and Lejweleputswa (DC18) leading the rest of the district municipalities with the highest prevalence rates in 2003 (Table 3). Since 1999, the annual HIV prevalence rate in Lejweleputswa – the district municipality which is home to the Free State Goldfields - has been consistently higher than the equivalent rates for the Free State and South Africa over the same period. For most of the period 1999-2001, it was also the district with the highest HIV-prevalence rate in the Free State. A closer analysis of this trend, and particularly a reflection on the reasons for the consistently high prevalence rate in Lejweleputswa, is offered in section 5.1.

Table 3: Free State District Municipalities: HIV prevalence rates (1999-2003)

District	Municipality	Estimated population (2002)	HIV prevalence rate (antenatal)				
			1999	2000	2001	2002	2003
DC16 Xhariep District Municipality	Letsemeng	38 604	*	*	*	*	25,7%
	Kopanong	54 150					
	Mohokare	39 316					
	subtotal	**132 070**					

Table continues…

Table 3: Free State District Municipalities: HIV prevalence rates, 1999-2003 (continued)

District	Municipality	Estimated population (2002)	HIV prevalence rate (antenatal)				
			1999	2000	2001	2002	2003
DC 17 Motheo District Municipality	Naledi	27 026	26,6%	29,6%	28,5%	31,0%	36,3%
	Mangaung	654 922					
	Mantsopa	54 344					
	subtotal	**736 292**					
DC18 Lejwele-putswa District Municipality	Masilonyana	64 409**	31,9%	30,1%	41,1%	29,8%	33,3%
	Tokologo	32 456**					
	Tswelopele	53 714**					
	Matjhabeng	408 170**					
	Nala	98 264**					
	subtotal	**657 013****					
			1999	**2000**	**2001**	**2002**	**2003**
DC19 Thabo Mo-futsanyane District Municipality	Setsoto	119 112	27,9%	27,1%	27,8%	26,0%	28,0%
	Dihlabeng	116 302					
	Nketoana	69 756					
	Malutia Phofung	383 337					
	Phumelela	49 151					
	Golden Gate Highlands National Park	670					
	District Managed Area						
	subtotal	**738 328**					

Table continues…

Table 3: Free State District Municipalities: HIV prevalence rates, 1999-2003 (continued)

District	Municipality	Estimated population (2002)	HIV prevalence rate (antenatal)				
			1999	2000	2001	2002	2003
DC20 Northern Free State District Municipality	Moqhaka	183 822					
	Ngwathe	130 231	27,6%	21,1%	29,4%	28,1%	23,8%
	Metsimaholo	116 000					
	Mafube	57 918					
	subtotal	**487 971**					
Free State	**Total**	**2 857 519**	**28,0%**	**28,0%**	**30,1%**	**28,8%**	**30,1%**

Sources: Compiled from Barron and Asia, 2001; Department of Health (Free State) 2004; MDB 2004.

- * = DC16 was not included in the antenatal surveys prior to 2003.
- ** = Data for 2001

3. THE NEXUS OF POVERTY, INEQUALITY, ECONOMIC DEPRIVATION AND HIV IN THE FREE STATE

The relationship between health - and in this case, HIV/AIDS - and poverty is one which is increasingly recognised and understood (Booysen 2004; Bachman and Booysen 2004; Whiteside 2001). Since this relationship is much more significant in societies with glaring inequalities, it calls for a closer look at some of the socio-economic disparities in the Free State in order to understand the social environment which helps drive the high HIV prevalence rate in the province.

Several possible reasons can be listed for the high incidence of HIV/AIDS in the Free State, most of which either directly or indirectly relate to prevailing socio-economic conditions and low levels of formal education in the province. For example, more than 7 out of every 10 women who tested HIV positive at antenatal clinics in the Free State in 2003, did not complete grade 12 (Department of Health 2004). Viewed from a wider angle, almost 38% of the Free State population older than 20 years did not complete primary schooling (MDB 2004). In this way, poor educational status feeds into the cycle of poverty, economic deprivation and inequality to create fertile breeding grounds for the spread of the HI-virus (see also section 5.1).

The likelihood that low levels of human development quite often constitute the breeding grounds for HIV/AIDS transmission - particularly conditions of poverty and poor literacy - has been extensively argued and researched (Cf Booysen and

Arntz 2001; Pelser, Ngwena and Summerton 2004). Some international HIV/AIDS authorities explain the variability of HIV prevalence in terms of the social and economic characteristics of societies, or the so-called Jaipur paradigm (NPU 2000). The latter is a conceptual framework which posits that the shape of an epidemic curve, i.e. how many people are infected and how rapidly the epidemic spreads, is determined by two core variables: the degree of social cohesion in a society, and overall levels of wealth and income distribution in that society (Pelser 2004). The larger the diversity of ethnic, language and religious groups for instance, the smaller the chance that the society will function as an all-inclusive system, and thus the weaker the level of social cohesion. For analytical purposes, *wealth* is defined as per capita income, i.e. level of income per head. Income inequality is also taken into account, since societies with low levels of social cohesion but high levels of wealth invariably have a high Gini coefficient[3], indicating great inequality. When the 2003 Gini coefficient for racial groups in the Free State is considered, huge inequalities are apparent. Table 4 shows the existence of relatively high levels of inequality in the Free State, and also that the level of inequality among B*lacks* in the Free State is higher than among other groups.

Table 4: Gini coefficient for various population groups in the Free State (2003)

Population group	Free State	South Africa
Black	0,60	0,62
Coloured	0,56	0,55
White	0,49	0,46
Indian	0,52	0,51
Total	**0,63**	**0,64**

Source: Compiled from SAIRR 2004

The significant disparities in wealth and inequality within the Free State population are manifested in a large proportion of poor people finding themselves in conditions which inevitably foster the spread of HIV. While the poor and destitute are often forced into high-risk survival strategies (such as commercial sex work), AIDS pushes people deeper into poverty as households lose their breadwinners to the disease. The pattern of a self-perpetuating cycle soon becomes evident. Poverty aggravates lack of access to education, health services and other economic resources; it causes dislocation due to inter-country or internal migration in pursuit of employment opportunities; it increases engagement in high-risk activities for economic survival reasons - all factors which contribute to vulnerability to HIV

[3] The Gini coefficient is employed to measure levels of equality and inequality within countries or groups of people in a country. It measures the distribution of total personal income (or consumption) among individuals or households between values of zero, which is perfect equality (i.e. everyone has the same income), and one, which is perfect inequality (i.e. one person has all the income).

infection (Pelser *et al.*. 2004). In some countries, conservative estimates indicate that the number of people living in poverty has already increased by 5% as a result of HIV/AIDS (UNAIDS 2001).

Some 52% of the Free State's population - totaling more than 1,5 million people - were living in poverty in 2003 (Table 5). This figure, however, masks the disparities which exist within it: almost six out of every ten black South Africans in the Free State are living in poverty, compared with less than one in every ten Whites. More than a quarter of the Free State population were officially unemployed in 2003, while more or less the same proportion found themselves unemployed for the country as a whole (Table 5). The situation is aggravated by the fact that the poverty-high risk behaviour-HIV-cycle seems to feed on itself, as illustrated in the case of the Free State Goldfields, and more particularly the Lejweleputswa District Municipality.

The negative economic growth rate over the period 1996-2002 is indicative of deteriorating economic prospects resulting from a decline in the dominant economic sector. Poverty, inequality and heightened vulnerability to HIV in the light of the economic decline are well illustrated by key economic, demographic and health indicators for this district municipality (tables 1-5). The mining sector in this region will in all likelihood continue to decline since the gold deposits on which this sector depends will increasingly become depleted and become more difficult to extract, leading to decreased profitability for mining companies. In the face of the further demise of the mining sector and the absence of any significant economic diversity, the possibilities for employment opportunities will continue to decline, fuelling already widespread poverty (see paragraph 5.1). Thus, if current trends in the mining sector persist and if no viable alternative economic growth sectors are developed, unemployment and poverty will most probably escalate even further and this in turn will create the socio-economic conditions under which HIV will continue and increase to spread.

Table 5: Comparative socio-economic indicators for the Free State and South Africa

Region	Proportion of people living in poverty[4] (2003)	Average economic growth rate (1996-2002)	Unemploy-ment rate[5] (2003)	Average annual household income (2002-2003)
Free State	51,9%	2,0%	28,6%	ZAR 46 315
Free State Goldfields	52,8%	-4,3%	44,8%	ZAR 35 558
South Africa	46,2%	2,8%	28,2%	ZAR 70 326

Source: Compiled from SAIRR 2004; MDB 2004.

Since the gold mining industry has always dominated economic activities in this district, it calls for an understanding of the rapidly changing socio-economic environments of mining regions in South Africa, and the Free State in particular. Firstly, however, brief reference is made to the historical social and labour dynamics in South African mining environments which, according to conventional thinking, have strongly contributed to the spread of the HI-virus and to high prevalence rates in some mining areas.

4. HIV/AIDS AND MINING ENVIRONMENTS: A SYMBIOTIC RELATIONSHIP?

Throughout history, human mobility has been an important driving force in epidemics of infectious disease, and the rapid spread of HIV in southern Africa is no exception. Across southern Africa, the phenomenon of men migrating to urban areas in search of work and leaving their partners and families at home, is widespread and has complex historical roots. Over many decades the region's dependency on migrant labour - both inside countries and across borders - has seen men desperate to find work flocking to large urban areas in South Africa in search of employment on the mines.

[4] The proportion of people living in poverty is defined as the number of people living in households with an income less than the poverty income, which for 2003 ranged from R678 per month for a single person to R2 899 for a household of eight members or more (SAIRR 2004).

[5] The 'strict' or official definition of unemployment is used here (expressed as a percentage). According to Statistics South Africa, the *unemployed* are those among the economically active population who (i) have not worked during the last seven days prior to the interview, (ii) want to work and can start working immediately, and (iii) have actively sought employment (or explored alternative sources of income). The 'expanded' definition of unemployment excludes the last criterion, and thus counts jobless people too discouraged to look for work as unemployed. The expanded national unemployment rate for 2003 was 41,8%, while the equivalent proportion for the Free State stood at 41,0% (SAIRR 2004).

Although the numbers of foreign mine workers on South African mines have declined substantially over the past 10-15 years, most of South Africa's 300 000 gold and platinum miners still work far from home and often see their families only once a year - a system which originated under colonialism and blossomed under apartheid (UNAIDS 2004). Previous studies show that most of these men, due to their economic means and the need for companionship and recreation often have easy access to sex workers or a *'town-wife'* with whom they may pick up STDs, and among these infections, HIV. When they return to their rural homesteads and partners a few times a year, many of them unwittingly carry the HI-virus with them. The sexual networks created by the migrant labour system contributes significantly to the spread of HIV in this mining environment, as in other similar socio-economic settings. Some contemporary studies even suggest that in order to find the roots of HIV/AIDS in South Africa "one need not look further than the system of migrant labour" (Horwitz 2001:1). However, due to the complex nature of HIV infection patterns among sexual partners, it would be erroneous to assume that the spread of HIV is only unidirectional - migrant labourers getting infected where they work and then infecting partners at the home base. Recent evidence suggests that it is just as often the partner at the home base who infects the migrant labourer partner as it is the other way around. However, the fact that migrant labour creates complex sexual networks that fuel the spread of the disease, is hard to deny.

Today, this system is changing for many mineworkers as companies strive to replace crowded, all-male hostels with low-cost, family housing, often working with local governments to convert conventional mine hostels and to build houses. However, the IOM (2005: 33) suggests that these initiatives have not been implemented on a wider scale. Thus, in spite of these efforts, more that 90% of mine workers continue to reside in single-sex hostels with easy access to commercial sex workers. Migrant workers have, therefore, been identified as a high-risk group when it comes to contracting and spreading STDs, especially HIV/AIDS. In fact, migrant workers have been found to be almost 2½ times more likely to be HIV-positive than non-migrant workers, while migrant couples were found to be more than twice as likely than non-migrant couples to have one or both partners infected (IOM 2005; Pelser et al. 2004).

When one looks at some statistics and estimates, the intertwined nexus of mining environments, migration and HIV/AIDS becomes clear. Recent figures put the proportion of mineworkers in South Africa currently infected with HIV at almost 34% (SAIRR 2004). The National Union of Mineworkers estimates that there could be between 12 000 and 14 000 AIDS-related deaths among miners annually by the year 2010 (UCSF 2001). The mining company Gold Fields puts the additional production costs for the company as a result of HIV/AIDS at $4-$10 per ounce,

while another company, Anglo Gold, estimates the additional costs at $4-$6 per ounce in their case (SAIRR 2004).

5. MINING IN THE FREE STATE GOLDFIELDS: A DWINDLING INDUSTRY

The Free State Goldfields derives its name from the rich gold deposits discovered in 1939 on the farm St Helena, near the present day city of Welkom. Soon after World War II, in 1946, more gold reefs were discovered in the area. This saw the start of a very lucrative gold industry. Welkom - founded in 1948 - became the centre of this industrial and mining heartland of the Free State, and the city currently acts as the administrative and economic service centre for the larger Goldfields region. The local authority of the area is vested with the Matjhabeng local municipality[6] based in Welkom. Matjhabeng is one of the five local municipalities which fall within the Lejweleputswa District Municipality (DC18 - see Table 3). Table 3 further shows that Matjhabeng, in 2001, hosted a total population of more than 400 000, i.e. almost two thirds of the entire population of Lejweleputswa District Municipality. This large concentration of the district's population in a single local municipality is a clear illustration of the social and economic gravity that revolves around the gold mining industry in the area.

In recent times, the once abundant gold deposits in the Goldfields have become increasingly depleted as a result of intensive and extensive mining operations in the area. In fact, problems experienced by the Free State Goldfields mirror those of the mining industry in the rest of South Africa. Aggravating the situation for the mining industry in general are sustained increases in production costs, lower production volumes and, of course, the unfavourable rand/dollar exchange rate. Despite higher dollar prices for gold (as well as for other minerals) over the past year or two, the relatively strong rand resulted in lower incomes for many mines, causing a large number of mines to operate at a loss for the past few years. Factors such as takeovers/mergers, liquidations and closure of mining operations have further contributed to the dilemma in which the mining sector now finds itself. It therefore comes as no surprise that the current state of the gold mining industry in South Africa has been described by observers as "one of its most critical periods and low points" (Kruger 2005, p.11).

[6] Matjhabeng local municipality comprises the previous municipalities of Welkom, Virginia, Odendaalsrus, Theunissen, Hennenman and Allanridge.

According to the South African Chamber of Mines, almost one third of national gold production was unprofitable at prices prevailing in the first quarter of 2004 (Van Biljon 2005). A total of 4 000 jobs on the mines were lost in September 2003, and by April 2004 at least another 7 500 job opportunities came under fire (SAIRR 2004). Some 90 000 of the current staff contingent in the mining sector are working on ten marginalised mines, i.e. mines which in most cases already suffer losses (Van Biljon 2005; Kruger 2005). Hence, an alarming number of mining operations in South Africa are currently either in downscaling mode, or even in the process of liquidation and shaft closure. As a result of the problems experienced in the industry, the mining sector's proportionate contribution to the gross domestic product (GDP) in South Africa declined from 7,2% in 1999 to 6,6% in 2004. The mining industry's proportionate contribution to the total GGP in the province dropped from 13,6% in 1998 to 8,5% in 2003 - a decline of almost 38%. The declining mining industry has also had a negative impact on the rest of the Free State's economy. During the period 1998-2003, the average annual economic growth rate for the Free State was -0,5%, compared with 1,9% for South Africa as a whole. In fact, during this time the Free State was the only province in South Africa with a negative economic growth rate - a situation driven mainly by the declining mining sector (Pelser *et al.* 2005). Besides the fact that the mining sector decreased in relative importance in the Free State provincial economy, the sector also seems to have become less labour intensive and more capital and technologically intensive. In 1996, the mining sector in the Free State generated proportionately *more* employment opportunities than its contribution to the economy. By 2002, however, the situation had been reversed, with the sector then generating proportionately *fewer* employment opportunities relative to its contribution to the economy. In fact, mining employment opportunities in the province declined from approximately 120 000 in 1996 to about 58 000 in 2002 (Urban-Econ 2004).

The struggling mining industry - nationally as well as in the Free State - has resulted in a systematic closing down of shafts, massive retrenchments, increased unemployment and, inevitably, rising levels of poverty. Unemployment and poverty have become the most concerning social problems in the Goldfields. In their turn, poverty, unemployment, poor socio-economic circumstances and a high dependency ratio have found expression in other social ills such as robberies, assaults, theft, high infant mortalities, out-migration, a high HIV prevalence rate and an increase in women abandoning their babies as a result of HIV/AIDS (Redelinghuys & Van Rensburg 2002). The intertwined nexus of these dynamics in the Goldfields is further explored below.

5.1 Poverty, HIV/AIDS and migration in the Goldfields

The inclination of a mining environment - in this case that of the Free State Goldfields - to show higher levels of HIV infection is illustrated in Table 7. More specifically, Tables 6 and 7 clearly illustrate the dynamics between socio-economic conditions, migration and HIV trends in the Goldfields. Table 7 shows a comparison between HIV prevalence rates at the national, provincial (Free State) and district level, and underlines the fact that Lejweleputswa District Municipality (the Goldfields region) consistently displays a higher annual HIV prevalence rate compared with either the national or provincial rates for the data period (1999-2003). As mentioned earlier, mobility patterns and economic activities in Lejweleputswa revolve to a large extent around the gold mining industry in the region. Lejweleputswa had a total population of more than 650 000 in 2001, the vast majority of whom were residing in Matjhabeng - the economic and administrative capital of the district (see Table 3).

In 1996, the mining industry in the Goldfields employed more than 107 000 people (45,6%) of the region's total employed labour force of 236 198 (Table 6). A mere five years later, in 2001, due to large downscaling in the mining industry, the equivalent proportion was halved to only 23,6%. Job losses in the mining industry alone in Lejweleputswa mounted to almost 70% during the period 1996-2001. During the same period, the ranks of the unemployed in the region swelled by almost 45% (Table 6). Furthermore, the total population in Lejweleputswa dropped by more than 6% during this period, mainly as a result of drastic downscaling in the mining industry and the subsequent increased out-migration of ex-miners in search of job opportunities elsewhere (Table 6). The net result of the above impacts was a negative economic growth of -4,3% for the region during 1996 to 2002 - a dire economic situation which manifested in almost 53% of all people in the Free State Goldfields living in poverty. This was more than the comparative proportion for the entire Free State or the proportion for the country as a whole (Table 5). Yet, the nightmare did not end here for the Goldfields: In May 2005 renewed negotiations have started between Harmony Mine and the National Union of Mine Workers concerning the possible retrenchment of another 12 000 mine workers in the Goldfields.

Table 6: Changing demographic and socio-economic trends in the Goldfields (1996-2001)

Indicator	1996	2001	% Change (1996-2001)
Total population: Lejweleputswa	703 425	657 013	-6,6
Total number of people employed: Lejweleputswa	236 198	148 441	-37,2
Total number of people unemployed: Lejweleputswa	83 309	120 545	44,7
Total employed in mining industry: Lejweleputswa	107 724	35 158	-67,4
Total employed in mining industry: Matjhabeng	98 787	30 581	-69,0

Source: Calculated and compiled from MDB, 2004

Table 7: Comparative HIV prevalence rates for South Africa, the Free State and the Lejweleputswa District Municipality (1999-2003)

Area	HIV prevalence rate (antenatal)				
	1999	2000	2001	2002	2003
South Africa	22,4	24,5	24,8	26,5	27,9
Free State	27,9	27,9	30,1	28,8	30,1
Lejweleputswa (Goldfields)	31,9	30,1	41,1	29,8	33,3

Source: Compiled from Department of Health, 2004

Tables 6 and 7 suggest that deteriorating economic conditions in Lejweleputswa - triggered mainly by the downscaling of the mining industry - were causing large proportions of poor people to find themselves in conditions which inevitably fostered the spread of HIV. Under these conditions, high-risk sexual behaviour has been proved in previous studies not only to foster, but also to be propelled by increased out-migration as many unemployed men go job-hunting elsewhere.

The staggering HIV prevalence rate of 36% in the Motheo District Municipality - a recognised labour sending area for Lejweleputswa - further testifies to the link between migrant labour and the spread of HIV. Motheo, and particularly Mangaung with the apartheid-established Botshabelo forming part of the local municipality, has for many years been a labour sending area for the Goldfields region. Krige, in the early 1990s, observed: "As Botshabelo, like towns in Bantustans, does not have a sufficient economic basis, labour is the primary export product in the form of daily and weekly commuters to Bloemfontein and as migratory labourers and monthly commuters to the OFS goldfields and other core areas" (Krige 1991,

p.112). Krige (1991) further claims that, at the start of the 1990s, more than 50% of the labour force of Botshabelo were working outside the area and thus migrating or commuting between their homes and work place. Therefore, taking into consideration the dynamics of poverty, unemployment, migrant labour and mining activities in Lejweleputswa and Motheo, it is not surprising to find that these two district municipalities are also home to the highest HIV prevalence rates in the Free State.

6. CONCLUDING COMMENTS

Against the background of a dwindling mining sector causing declining economic growth and socio-economic misery, this article has illustrated and debated the nexus of high levels of poverty, unemployment, out-migration and HIV prevalence in an environment dominated by mining. Thus, the article has reconfirmed the roles which migration, poverty and poor socio-economic conditions play as breeding grounds for the spread of HIV/AIDS. People trapped in poverty are more likely to resort to commercial sex and other survival strategies which put them at risk of contracting HIV, thus creating a vicious cycle, and one that certainly propels the spread of HIV.

Although the monitoring of the HIV-epidemic started over a decade ago, South Africa, despite all its resources, is still far from having a comprehensive response which is commensurate with the seriousness of HIV/AIDS. Clearly the implementation of a poverty eradication strategy to address the impact of HIV/AIDS should be of the highest priority in the Free State Goldfields and elsewhere in the country where dynamics similar to those pointed out here prevail. Such a strategy is necessary not only to address the impact of the epidemic, but also to curb the spread of HIV infection. Viewed holistically, this calls for a comprehensive and integrated strategy - similar to the one stipulated in the Population Policy for South Africa which was accepted as policy framework in 1998 - to address the overarching and complex issues brought about by HIV/AIDS. The Population Policy identifies 17 major population challenges facing South Africa: amongst others poverty, unemployment, poor education, poor health and problems in a range of other social services. The policy further, justifiably, highlights the fact that the rising incidence of HIV/AIDS is detrimental to the overall development potential of South Africa, and it explicitly acknowledges the inter-related nature of health, poverty, environment and development. Yet, despite the necessity of such an integrated and streamlined strategy receiving 'paper-recognition', many critics still feel that the official government response to and campaign against HIV/AIDS in South Africa - despite isolated successes - is insufficiently mainstreamed, does not prioritise certain key interventions, and suffers from insufficient leadership from many

sectors of society, including that from national government. International assessments have shown that a core prerequisite for successful HIV/AIDS campaigns and an effective response, is - amongst others - that such campaigns should be built on a community and multi-sectoral response which mainstreams HIV/AIDS. In the case of the Goldfields, as elsewhere, this means that human development initiatives and intervention programmes should, first and foremost, be targeted at those socio-economic conditions which foster the spread of the epidemic. As pointed out in this article, such a strategy - at least in the case of the Goldfields - calls for more urgent and dedicated interventions in the arenas of poverty, disparities in equality, low literacy levels and unemployment.

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