

**Save the Children UK:
Southern Africa scenario planning paper**

**The impact of HIV/AIDS on Southern Africa's Children:
Poverty of Planning and Planning of Poverty.**

By

Professor Alan Whiteside¹
With Su Erskine

Health Economics and HIV/AIDS Research Division
University of Natal
Durban

**SARPN acknowledges permission from SCF UK for permission
to post this document on our website**

Date of Draft 2/7/2002

¹ This paper owes much to the Shell study and permission to use some of the material and many of the ideas is gratefully acknowledged. In particular I would like to thank Clem Sunter who read and commented on the paper.

TABLE OF CONTENTS

Introduction	1
The HIV/AIDS Epidemic in the Southern African Development Community.....	1
Understanding HIV/AIDS	4
Understanding the HIV Curve.....	5
Understanding the AIDS Curve.	6
The approach in this paper.....	7
What We Know.....	9
Gender differences in infection at different ages	10
Change in overall demographic profile of the region	12
Sources for orphan data:	13
Vaccines and Treatment.....	14
Gender and HIV/AIDS	15
Scenarios.....	16
The high road.....	16
The Low Road	20
Looking to the future.....	23
Options and Decisions	24
Appendix 1: Medical Interventions Assumptions.....	25
References.....	26

LIST OF TABLES

Table 1:	HIV Prevalence, Infections, Orphans, and Deaths in the SADC Region in 2001 Compiled from UNAIDS, 2002.....	2
Table 2:	Life expectancy and place in the Human Development Index	7
Table 3:	Extrapolation of HIV prevalence amongst ANC attendees to the general population: South Africa, 2000.....	10
Table 4:	HIV prevalence trends by age among ANC attendees in South Africa 1994—2001 ...	10
Table 5:	Botswana HIV prevalence amongst women attending ANCs according to age: 1992—2001.....	11
Table 6:	Namibia HIV prevalence amongst women attending ANCs according to age: 1994—2000.....	11
Table 7:	Swaziland HIV prevalence amongst women attending ANCs according to age: 1994—2000.....	11

LIST OF FIGURES

Figure 1: Estimated adult HIV prevalence in the SADC region (1997—2001).....	3
Figure 2: Projected HIV Prevalence (1980—2010)	4
Figure 3 The Two Epidemic Curves	5
Figure 4: The Universe of possibilities	8
Figure 5: Age and sex distribution of HIV infections, Zambia	12
Figure 6: Projection Population Structure With & Without the AIDS Epidemic, Botswana, 2020.....	13
Figure 7: Projected number of AIDS Orphans, South Africa	13
Figure 8: The Impact of HIV/AIDS on an Organisation: a diagrammatic representation	23

Introduction

In the initial discussion of this paper the terms of reference began: "Save the Children has not been adept at managing its programme planning processes in the region. Country based strategic planning has often been a tortuous business which has alienated our staff because of the abstract language used. It has been a time consuming and often disjointed process leaving most participants dissatisfied with the final planning document".

Save the Children (SCF) is not alone in this. HIV/AIDS is changing the environment in which we operate. It will have effects as serious as the plague in medieval Europe and we do not know how to deal with it. In effect there is a complete poverty in planning which will result in considerable impoverishment and misery in much of Southern Africa. One new way to assess the situation would be to through developing scenarios. HEARD has some experience in this having been part of a team working with Shell South Africa on developing scenarios for their Southern African region. We therefore agreed to prepare a draft paper, and this was discussed with SCF staff. We did not agree to follow the terms of reference exactly but rather to prepare the paper with scenarios. The first draft was completed and sent for comment on 21st June with a deadline for comment of 27th June (Alan Whiteside was away from 27th June).

The first draft showed up one major problem. SCF must be part of the brainstorming. We know what HIV/AIDS means in broad terms, we have some ability at developing broad scenarios but we do not know what SCF does or what these will mean for them. In effect while HEARD's work is nearly complete that of SCF is only just beginning.

The HIV/AIDS Epidemic in the Southern African Development Community

In June 2001 the HIV/AIDS pandemic was described by Secretary-General Kofi Annan at the United Nations General Assembly Special Session on AIDS as the greatest threat to global health since the Black Death of the 14th century. But attention to the global HIV/AIDS pandemic does not change the fact that it has been, and still is, primarily an African issue. Of the 40 million people currently living with HIV/AIDS, 28.5 million are African (71.25 percent); Africa currently has an adult HIV prevalence rate of nine percent, globally this rate is only 1.2 percent.

If Africa is badly affected by HIV/AIDS, then Southern Africa is the epicentre. One third of the global population living with HIV is in the Southern African Development Community (SADC) countries². Here the latest data from UNAIDS estimates that 13.79 per cent of the adult population is infected with HIV, although there is great variation among countries: from 0.1 per cent in Mauritius to 38.8 per cent in Botswana. The most recent antenatal clinic surveys of women attending state clinics show rates are continuing to rise: ANC HIV prevalence rate is 24.8 per cent in South Africa [Department of Health, South Africa, 2001] and 34.2 per cent in Swaziland

² The SADC countries are: Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe.

[Kingdom of Swaziland, 2000]. In Botswana, consistent prevalence rates of over 40 per cent have been recorded in some antenatal centres [Government of Botswana, 2001].

That HIV prevalence continues to rise in Southern Africa is cause for very serious concern. Even more worrying, the spread is far more uniform between urban and rural areas than was the case in East Africa, which previously had the highest rates of HIV infection. A review of the data from the (SADC) region is given on Table 1.

Table 1: HIV Prevalence, Infections, Orphans, and Deaths in the SADC Region in 2001
Compiled from UNAIDS, 2002

Country	Estimated Adult Prevalence %	No. of adults & children living with HIV/AIDS	AIDS orphans (cumulative living)	AIDS deaths (adults and children)	Population
Angola	5.5	350 000	100 000	24 000	13 527 000
Botswana	38.8	330 000	69 000	26 000	1 554 000
D R Congo	4.9	1 300 000	930 000	120 000	52 522 000
Lesotho	31	360 000	73 000	25 000	2 057 000
Malawi	15	850 000	470 000	80 000	11 572 000
Mauritius	0.1	700	No data	<100	1 171 000
Mozambique	13	1 100 000	420 000	60 000	18 644 000
Namibia	22.5	230 000	47 000	13 000	1 788 000
Seychelles	No data	-	-	-	-
South Africa	20.1	5 000 000	660 000	360 000	43 792 000
Swaziland	33.4	170 000	35 000	12 000	938 000
Tanzania	7.8	1 500 000	810 000	140 000	35 965 000
Zambia	21.5	1 200 000	570 000	120 000	10 649 000
Zimbabwe	33.7	2 300 000	780 000	200 000	12 852 000
Total/average	13.7	14 690 700	4 964 000	1 180 000	207 031 000

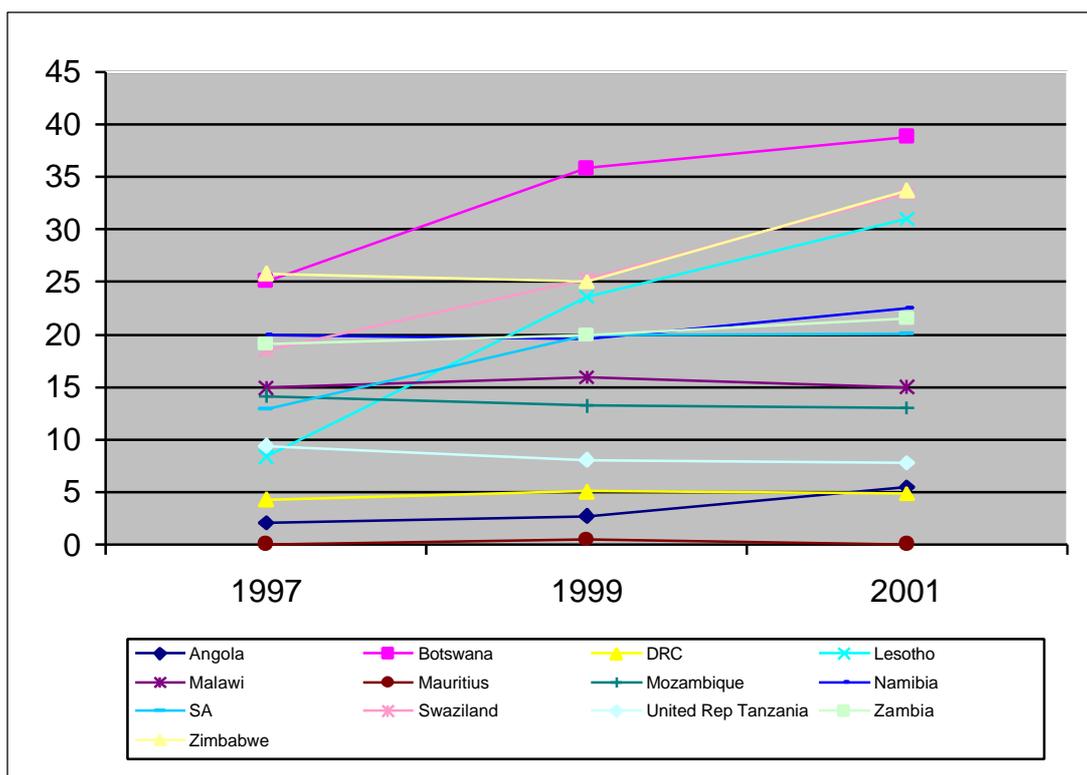
Notes: 1. there are no data in the 2002 UNAIDS report for Seychelles

2. Totals are calculated by the author for the SADC region.

Although for the countries comprising SADC the main mode of HIV transmission is heterosexual, the epidemics are far from uniform. Understanding how each epidemic is different, what the driving forces are and how the epidemic fits the basic epidemiological curve is important when considering management and mitigation strategies for current and future impacts of the epidemic. The graph below shows the progression of HIV over time for 13³ of the 14 SADC countries.

³ No estimates are produced by UNAIDS for the Seychelles.

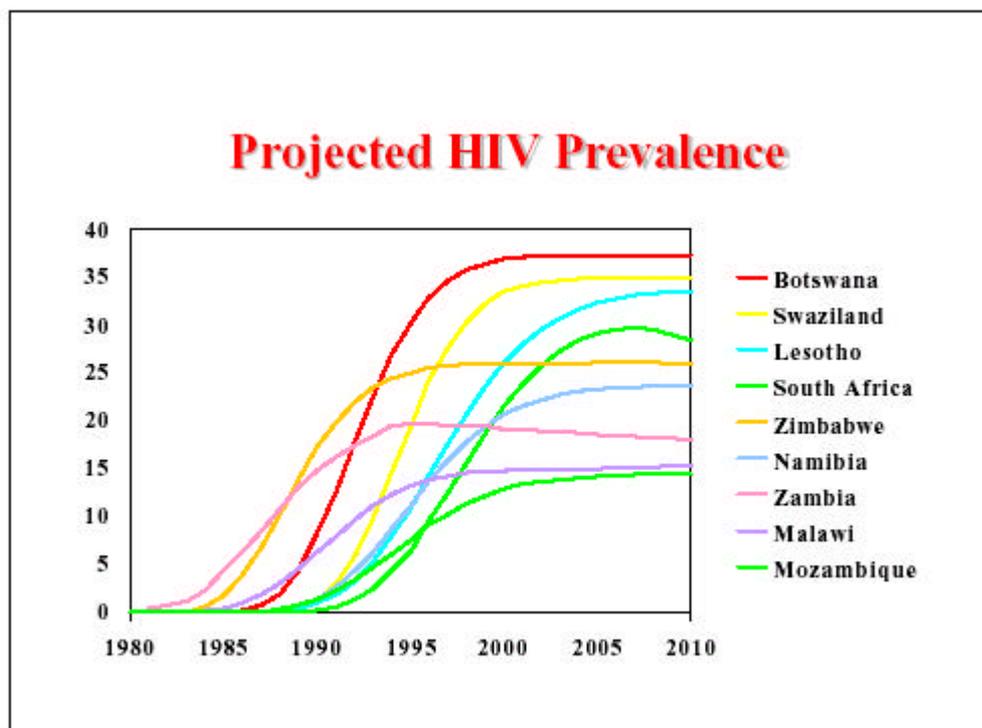
Figure 1: Estimated adult⁴ HIV prevalence in the SADC region (1997—2001)



(Source: UNAIDS, 1998,1999,2002.)

There have been models developed to project HIV prevalence such as those of the POLICY Project, www.policyproject.com. These projections assume past trends in transmission, incubation period, medical interventions and behaviour continue into the future. Figure 2 gives HIV prevalence as projected by the POLICY Project in October 2001. Both Botswana and Malawi have already levelled off at 37 percent and 15 percent respectively, but the epidemics as a whole in the region will only begin to peak and then plateau from 2005.

⁴ Adults are considered to be all those between the ages of 15 and 49 years.

Figure 2: Projected HIV Prevalence (1980—2010)

(Source: The POLICY Project, 2001).

Understanding HIV/AIDS

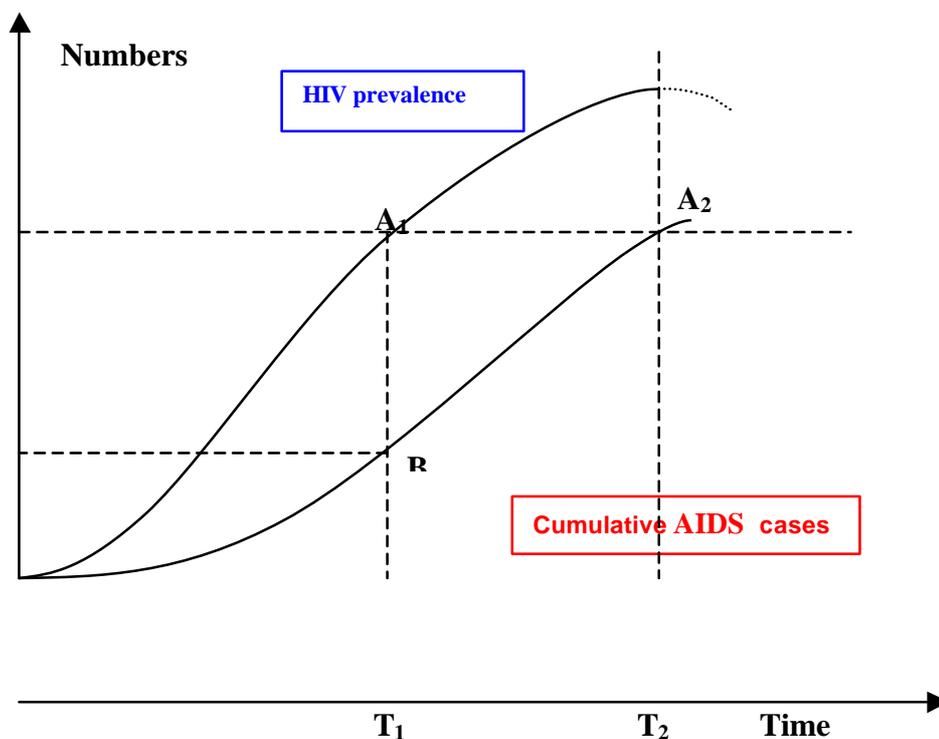
HIV/AIDS is a long wave event as compared to other epidemics. The true death toll cannot be estimated until the full wave form of the epidemic has been seen. It may be as long as 20 years before we can say that the world epidemic has peaked and/or begun to decline. If we take into account the social and economic impacts of the epidemic, in particular HIV/AIDS related poverty, it is clear that this will get very much worse over the coming years and decades unless there is a concerted effort to address it.

The long wave nature of the epidemic can be simply understood by making reference to Figure 3, which shows HIV prevalence and cumulative AIDS cases. The key concept is the epidemic curve. HIV, indeed any disease, will move through a susceptible population infecting some, missing others. Epidemics follow an “S” curve as shown in the Figure. They start slowly and gradually. If a critical mass of infected people is reached then the growth of new infections accelerates thereafter. The epidemic then spreads through the population until those who are susceptible and exposed have been infected.

In the final phase of an epidemic—where the “S” flattens off at the top, and turns down—people are either getting better or deaths outnumber new cases so that the total number alive and infected passes its peak and begins to decline. With most diseases the curve will decline rapidly. HIV and AIDS are different. What sets HIV and AIDS apart from other epidemics is that, as shown there are two curves. With other diseases, infection is followed by illness with in a few days or weeks. In the

case of HIV the infection curve precedes the AIDS curve by between five to eight years. This reflects the long incubation period. This is why HIV/AIDS is in some ways such a lethal epidemic compared to, say, Ebola Fever. In the latter case people fall ill quickly and visibly, putting the general population and public health professionals on their guard.

Figure 3 The Two Epidemic Curves



(Source: Whiteside and Sunter, 2000.)

HIV infection moves through a population giving little sign of its presence. It is only later—when substantial numbers are infected—that AIDS deaths begin to rise. People do not leave the infected pool by getting better as there is no cure. They leave by dying (of AIDS or other causes). The effect of life-prolonging ARVs is, ironically, to increase the pool of infected people. In Figure 3 the vertical axis represents numbers of infections or cumulative illnesses and the horizontal axis time. At time T_1 , when the level of HIV is at A_1 , the number of AIDS cases will be very much lower, at B_1 . AIDS cases will only reach A_2 (i.e. the same level as A_1) at time T_2 . By then years will have passed and the numbers of infected people will have risen even higher.

Understanding the HIV Curve

The HIV epidemic curve is the line that goes to point A_1 . Very often this is the only data we actually have. **In most countries all we actually “know” is the data from surveys on HIV prevalence in AN Clinics.** Figure 1 shows the ANC HIV epidemic curves for a number of SADC countries. It is these data that are used to calculate the adult prevalence rate, number of infections, illnesses, deaths and orphans and to make projections of future HIV prevalence. There are a number of models that are used to do this. Most accessible are the Spectrum models developed by The

Futures Group International www.tfgi.com as shown in Figure 2, but South Africa has its own models and modellers, in particular the Actuarial Society of Southern Africa (ASSA) www.assa.org.za Modellers and actuaries have regular review meetings and UNAIDS has a Modelling Reference Group. In developing this scenario paper the minor differences between the models are not considered significant.

☛ **Key point:** We can change the shape of the future curve, we can prevent more infections from occurring and this is the first challenge for an organisation such as Save the Children.

Understanding the AIDS Curve.

Despite the high levels of HIV infection, the consequences of this disease are only beginning to be felt in Southern Africa. This is because HIV has a long incubation period before people begin to fall ill. Thus if we refer back to Figure 3 and set time T_1 as mid-2002 then the number of cases at HIV prevalence of A will only be B, and these cases represent infections that took place some four to eight years earlier. However we can be sure that the number of AIDS cases and deaths will occur. To give an example according to projections made in 2000 [Whiteside and Sunter, 2000], in 2002 South Africa would have about 4.5 million people living with HIV, but only an estimated 331 000 AIDS cases and 245 000 deaths. By 2010, 6 million South Africans are projected to be living with HIV; there will be 813 000 AIDS cases; and, 551 000 deaths. The cumulative number of deaths will have risen from fewer than 750 000 at the beginning of 2002 to about 4 million in 2010. The number of orphans will have risen from 425 000 to close to 2 million over the same period.

Adequate care and treatment can prolong life and improve its quality and productivity, but even the most advanced triple-drug anti-retroviral therapy (ART) does not cure HIV/AIDS. The increased morbidity and mortality from this disease has far reaching consequences.

Perhaps the starkest impact is on life expectancy, which in some countries will fall to levels below those seen fifty years ago. This, in turn, has a dramatic and negative impact on one of the few composite measures of development: the United Nations Development Programme's (UNDP) Human Development Index (HDI). Life expectancy figures provide one third of the weighting for the calculation of the HDI, the others being educational attainment, which is measured by literacy and enrolment rates and standard of living, which is measured by real gross domestic product (GDP) per capita. We must note that figures on life expectancy are modelled rather than observed.

Table 2: Life expectancy and place in the Human Development Index

	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)
Angola	46.8	0.283 (165)	47.2	0.335 (157)	46.5	0.398 (160)	45.0	0.422 (146)
Botswana	65.2	0.741 (71)	52.3	0.673 (97)	47.4	0.609 (122)	41.9	0.577 (114)
D R Congo	51.2	0.517 (125)	51.3	0.500 (130)	50.8	0.479 (141)	51.0	0.429 (142)
Lesotho	60.8	0.464 (130)	57.9	0.457 (137)	56.0	0.582 (127)	47.9	0.541 (120)
Malawi	45.5	0.321 (157)	41.1	0.320 (161)	39.3	0.399 (159)	40.3	0.397 (151)
Mauritius	70.4	0.825 (54)	70.7	0.831 (61)	71.4	0.764 (59)	71.1	0.765 (63)
Mozambique	46.4	0.261 (167)	46.0	0.281 (166)	45.2	0.341 (169)	39.8	0.323 (157)
Namibia	59.1	0.573 (116)	55.9	0.570 (118)	52.4	0.638 (115)	44.9	0.601 (111)
Seychelles	71.0	0.792 (60)	70.1	0.848 (51)	71.0	0.755 (66)		
South Africa	63.2	0.649 (100)	63.7	0.716 (90)	54.7	0.695 (101))	53.9	0.701 (94)
Swaziland	57.8	0.586 (110)	58.3	0.582 (114)	60.2	0.644 (113)	47.0	0.583 (113)
Tanzania	52.1	0.364 (144)	50.3	0.357 (149)	47.9	0.421 (156)	51.1	0.436 (140)
Zambia	48.6	0.411 (136)	42.6	0.369 (143)	40.1	0.431 (151)	42.9	0.554 (117)
Zimbabwe	53.4	0.534 (124)	49.0	0.513 (129)	44.1	0.560 (130)	42.9	0.544 (117)

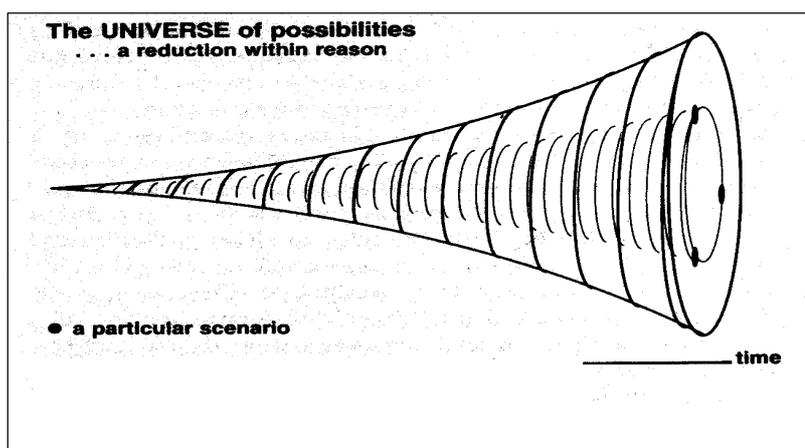
The situation will get worse as people living with HIV develop AIDS and the number of people dying increases. The U.S. Bureau of the Census has calculated what life expectancy will be by 2010. They suggest that in Botswana it will fall to 37.8 years; in South Africa to 42.4 years; and, in Zimbabwe to 38.8 years [US Bureau of the Census, 1998].

→ **Key point:** the number of AIDS cases and deaths with consequent social economic and political impacts are certain to rise. Of central importance is providing care for the millions of affected and infected children. To date there has been little evidence that this is being planned for.

The approach in this paper

Scenario building is widely used in business. In the 1980s, the large multinational Anglo-American projected possible futures for South Africa. The outcomes were presented to many thousands of people and played an important part in setting the scene for the negotiations that brought an end to the apartheid regime (Sunter, 1987).

Scenario planning works as illustrated in Figure 4 below. This shows a “Cone of Uncertainty” opening up into the future. For example, if we asked what the oil price would be in a week’s time, we would get answers covering a range of a few cents. If we asked what it would be in ten years the range might be in the tens of dollars. This is true of any parameter: the further you look into the future, the less certainty there is.

Figure 4: The Universe of possibilities

(Source: Sunter, 1987)

The scenario planner aims to reduce the number of reasonable possibilities; hence the inner cone becomes what is most likely to happen.

With regard to AIDS impact, we start by looking at what we know now. For example we can predict the numbers who will fall ill and die with some certainty over the next 10 years. The next step is to look at “key uncertainties” within the reduced cone. These are factors that are important for the future, but whose movement cannot possibly be predicted, for example a very cheap and effective treatment becoming available.

Finally the scenario planner examines the interplay between “key uncertainties” and writes the plausible scenarios. These are simple and consistent stories about the future which illustrate possible outcomes and challenges. Such hypothecations are more effective than single-line forecasts which offer no understanding of the interplay of forces within systems. Most important they are able to take into account the complex interactions of multiple long wave events. This is something which should be applied to AIDS impact, but which has not been done.

Three other points made by the Anglo team are important. These are:

- Scenario plans seldom come true. For example in the 1950s no one would have predicted that the Asian economies would take off and Africa’s stagnate.
- It is difficult to communicate bad news in a forecast. Indeed one rarely sees business predicting declining profits. People do not like being told that something bad is going to happen. It is preferable to put forward the *possibility* of bad news and offer a way out.
- Forecasts may be received as though they imply that the future is decided irrespective of any effort on the listeners’ or readers’ part. But as Anglo noted, there are two kinds of future: the “active future” which you make happen, and the “passive futures” which you let happen to you. With regard to AIDS impact, few if any governments have begun to consider their “active futures”.

More recently Clem Sunter and Chantell Ilbury have written a “how to” manual of Scenario planning [Sunter and Ilbury, 2001]. In 2001 the author of this paper, Alan Whiteside, was involved in a team working for Shell South Africa which asked “What will be the impact of AIDS on Shell’s markets in Southern Africa during the next twenty years? All this has been used to build the SCF scenarios for Southern Africa.

☞ **Key point:** This paper has two very important constraints:

1. to get maximum benefit from scenario planning SCF staff and outsiders should be involved—this will enable the crucial brainstorming element.
2. the time frame should be longer than 5 years.

The poverty of planning is that governments and donors have failed to get to grips with HIV/AIDS and its consequences. The reasons for this are examined, exhaustively, in Barnett and Whiteside (2002). In essence the argument is that HIV/AIDS changes the rules of the game and the result is that people are simply not able, conceptually or in reality, to plan for something they have no experience with and cannot grasp.

What We Know

Although Botswana, Zimbabwe, Swaziland, Lesotho, Namibia and Zambia all have HIV prevalence rates higher than South Africa, there are more South Africans infected than in any other SADC country, thought to be 5 million HIV positive adults and children at the end of 2001. Not only are the prevalence rates for these seven countries high, but also they are still on the increase. Zimbabwe had the greatest prevalence increase between 1999 and 2001, during which time prevalence increased by 8.64 percentage points. During the same period Swaziland’s HIV prevalence increased 8.15% points and Lesotho’s 7.43% points. This shows that even in some of the hardest hit countries, prevalence rates have not yet reached the plateau of the epidemiological curve. At the other end of the spectrum, Mauritius has the lowest HIV prevalence, the percentage of adults infected has yet to pass 1%. HIV prevalence will remain low in Mauritius and the Seychelles.

Similarly, HIV prevalence has not increased in the United Republic of Tanzania or Mozambique. In fact prevalence declined slightly in both these countries between 1999 and 2001. The Democratic Republic of Congo and Malawi also experienced a decline in HIV prevalence 1999 and 2001. Although a decline in HIV prevalence in these four countries may indicate that the epidemic is coming under control it might be because of data problems; and because more people are dying of AIDS than are becoming infected with HIV. Therefore declines in HIV prevalence need to be interpreted with care, they may also hide huge differences within countries.

✦ **Key point:** Women bear a disproportionate burden of this disease. They are more likely to be infected, (for physiological and social reasons) and they bear the burden of care of the sick and dying.

Gender differences in infection at different ages

In HIV/AIDS epidemics driven by heterosexual contacts, females tend to exhibit higher HIV prevalence rates than males. This is because women are biologically and culturally more at risk and more vulnerable to contracting the HI Virus.

The table below is an extrapolation of HIV prevalence from pregnant women attending ante-natal clinics to the general population. It is estimated that 300 000 more women are infected than men in South Africa.

Table 3: Extrapolation of HIV prevalence amongst ANC attendees to the general population: South Africa, 2000

Gender	Age grouping	Number of HIV+ individuals
Female	15 – 49 years	2.5 million
Male	15 – 49 years	2.2 million
Babies		106 109
Total		4.7 million

(Source: National HIV and Syphilis Sero-Prevalence Survey of Women Attending Public Antenatal Clinics in South Africa, 2000)

HIV prevalence is not spread uniformly amongst women. Apart from socio-economic and geographical variations, different age cohorts are affected and infected differently. The tables below show HIV prevalence for various age cohorts in South Africa, Botswana, Namibia and Swaziland.

Table 4: HIV prevalence trends by age among ANC attendees in South Africa 1994—2001

Age Group	Estimated HIV-positive							
	1994	1995	1996	1997	1998	1999	2000	2001 (95% CI)
< 20	6.47	9.5	12.9	12.9	21.0	16.5	16.1	15.4 (13.8-16.9)
20-24	8.94	13.12	17.74	17.74	26.1	25.6	29.1	28.4 (26.5-30.2)
25-29	8.63	11.03	15.33	15.33	26.9	26.4	30.6	31.4 (29.5-33.3)
30-34	6.37	8.05	12.2	12.2	19.1	21.7	23.3	25.6 (23.5-27.7)
35-39	3.72	7.37	9.71	9.71	13.4	16.2	15.8	19.3 (17.0-21.5)
40-44	5.28	4.36	10.16	10.16	10.5	12.0	10.2	9.1 (6.2-11.9)
45-49	0.41	7.45	5.83	5.83	10.2	7.5	13.1	17.8 (4.3-31.4)

(Source: National HIV and Syphilis Sero-Prevalence Survey of Women Attending Public Antenatal Clinics in South Africa, 2000 and 2001)

Table 5: Botswana HIV prevalence amongst women attending ANCs according to age: 1992—2001

Age cohort	Year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
15-19	16.4	21.8	20.7	32.4	27.2	28.0	28.6	21.5	25.3	24.1
20-24	20.5	27.1	31.5	34.8	40.9	41.4	42.8	38.7	41.0	39.5
25-29	19.4	24.2	30.2	32.6	34.0	41.0	45.2	43.3	52.6	48.4
30-34	16.5	16.8	18.0	33.5	32.0	33.3	38.2	42.0	49.6	44.1
35-39	8.0	12.6	16.2	23.2	22.2	25.6	27.2	33.3	41.6	39.0
40-49	9.3	9.4	8.0	15.0	20.0	23.1	23.9	25.5	34.9	26.7

(Source: Botswana 2000 and 2001 HIV sero-prevalence sentinel survey amongst pregnant women and men with sexually transmitted diseases.)

Table 6: Namibia HIV prevalence amongst women attending ANCs according to age: 1994—2000

Age cohort	Year			
	1994	1996	1998	2000
15-19	6	11	12	12
20-24	11	18	20	20
25-29	9	17	22	25
30-34	9	18	19	21
35-39	3	8	12	15
40-44	1	12	14	9
45+	12	1	13	8

(Source: Report of the 2000 HIV Sentinel Sero Survey, Ministry of Health and Social Services, Republic of Namibia.)

Table 7: Swaziland HIV prevalence amongst women attending ANCs according to age: 1994—2000

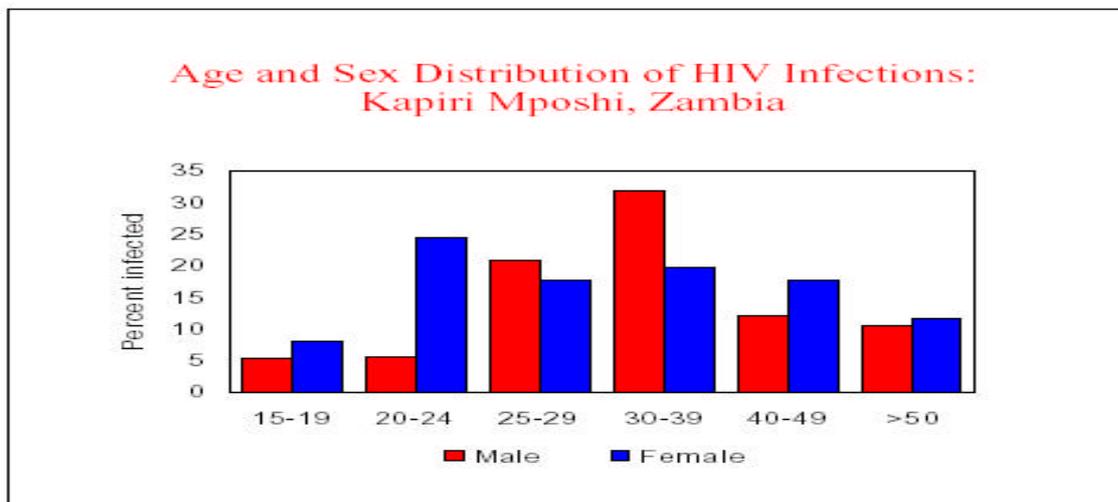
Age Cohort	Year			
	1994	1996	1998	2000
< 20	18.4	24.7	25.2	25.9
20 – 24	18.8	33.1	38.4	42.5
25 – 29	14.3	28.0	38.0	40.7
30 – 39	10.3	18.8	23.7	25.4

(Source: Ministry of Health and Social Welfare, October 2000. The Kingdom of Swaziland 7th HIV Sentinel Surveillance Report.)

If a comparison of HIV prevalence by age cohort is made between males and females, HIV prevalence is higher amongst girls and young women than boys and young men. The number of females infected between the age of 15-24 is markedly higher than for males. Female infection levels are highest for those aged between 20-24, whilst the highest levels of infection for men are in

the 30-39 age group (see the figure below). This is largely because females tend to become sexually active far younger than males.

Figure 5: Age and sex distribution of HIV infections, Zambia



(Source: The POLICY Project, 2001)

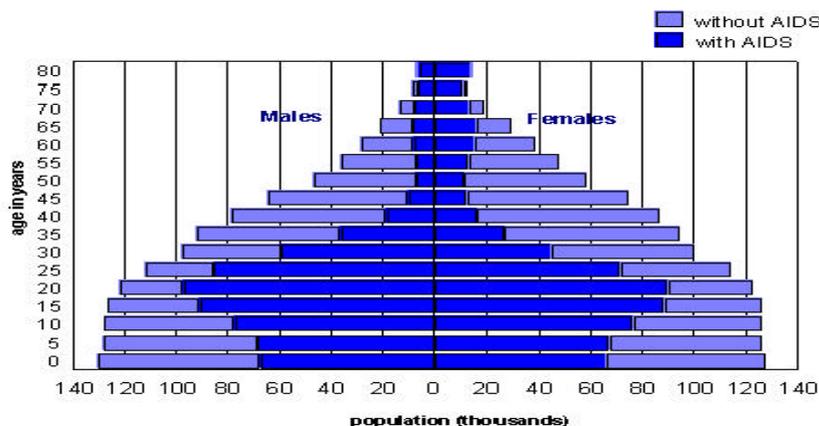
There are a number of reasons why females are believed to become sexually active at a younger age than males, including:

- older males tend to have more financial resources at their disposal and can afford to have partners, the “sugar daddy” phenomenon,
- men consciously seek younger and younger female partners to reduce the likelihood the partner being HIV positive,
- female, and particularly younger girls are often coerced into sex as they have little power to refuse and even less power to negotiate safe sex.

Change in overall demographic profile of the region

Typically most developing countries have a population structure shape that can generally be described as a “pyramid”, a broad base that tapers off steadily with increasing age.

Figure 6: Projection Population Structure With & Without the AIDS Epidemic, Botswana, 2020



Source: UNAIDS 2000F

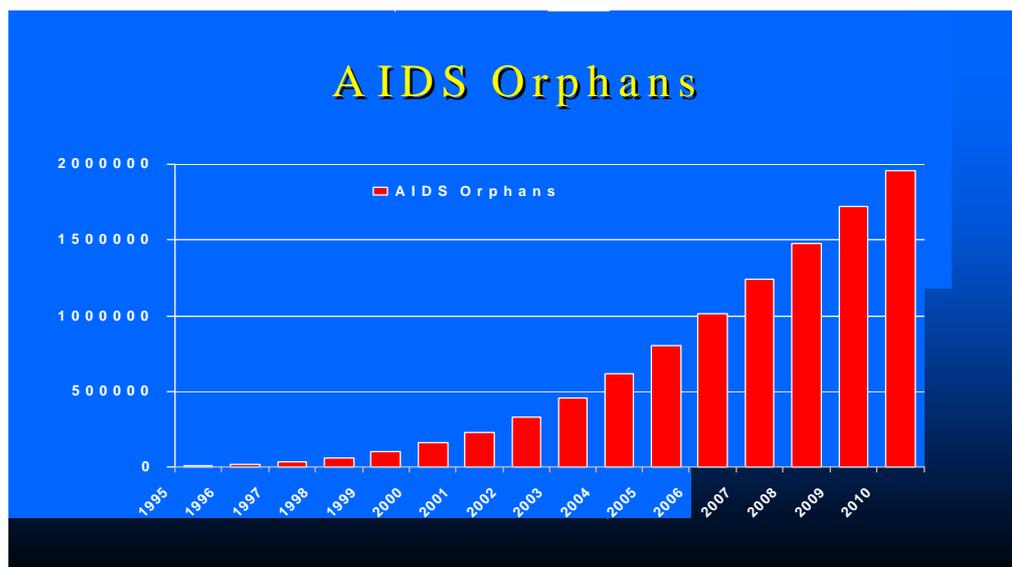
(Source: UNAIDS, June 2000).

As the HIV/AIDS epidemic begins to take its toll, the pyramid shape is being replaced by a “chimney” shape. The pyramid base becomes narrower, the female population above the age of 20 and the male population above the age of 30 shrinks radically. The exact implications of this new population structure are not clear (US Bureau of the Census, 2001; UNAIDS, 2000).

Sources for orphan data:

Referring to the figures on page 7, these numbers are taken from the Doyle Model, Metropolitan Life, Scenario 325.

Figure 7: Projected number of AIDS Orphans, South Africa



(Source: Metropolitan Life, Scenario 325)

Vaccines and Treatment.

We know that the first vaccines will not be available for between 5 to 7 years at the earliest. Vaccine development is resource intensive and most research is in the rich world. Such vaccines may not be appropriate or affordable for the poor world. The challenge is to find a solution that is acceptable, effective, affordable and deliverable. It is necessary to persuade major pharmaceutical companies to pursue vaccine development with the enthusiasm they have devoted to anti-retroviral development. Uncertainties associated with development of suitable vaccines include:

- The difficulty of establishing levels of immune response without human efficacy trials.
- The existence of sub-types of HIV and the fact that developing world strains are very different from those in the developed world.
- High-risk behaviours associated with HIV infection are practised over an extended period. Any vaccine would need to induce a long lasting immune response or involve regular boosters.
- The lack of trained specialists and adequate infrastructure in poor countries for trials. Additionally few countries will participate in trials unless they have access to the final, successful vaccine.

International partnerships form an important component of vaccine development, as do public-private sector collaborations. It may be that SCF has a role here.

There is also no cure for AIDS at the moment. However HIV positive people are not without care and there are a number of things that can be done at various stages in an illness. Initially people can “live positively” eating nutritious food, stopping smoking and making lifestyle changes; when opportunistic infections occur they can be treated effectively and inexpensively; prophylactic treatments can be provided to prevent a number of common illnesses; and when these treatments fail then ART can be introduced. This last is what has hit the headlines in recent months. ART is effective at reducing viral load which allows peoples’ immune systems to recover, but this is not a cure, and since it has only been available for four to five years we do not know how effective it will be or for how long. It is also expensive and is only available from the private sector, costs range from R1000 to R2500 per month at the lower range, although in theory it should be possible to provide it for as little as R500 per patient per month.

There is no suggestion that the public sector will provide this therapy in the short term. In South Africa the government is making it available for rape survivors and pregnant women. In Botswana there is the likelihood that it will be made more generally available through the Secure the Future initiative and generosity of a number of donors including the Gates Foundation. These are however the exceptions and for the vast majority of infected Southern Africans treatment with ART will remain an unobtainable dream. This is not to say that they cannot be treated—as outlined above they can and this is clearly an area for SCF action.

→ Key points:

Should SCF be providing ART for their own staff? Has SCF done an audit to see how the epidemic will affect their operations?

What is the SCF role in provision of treatment- at which level and why?

Gender and HIV/AIDS

Gender inequality is fuelling the HIV/AIDS epidemic: it deprives women of the ability to say no to risky practices, leads to coerced sex and sexual violence, keeps women uninformed about prevention, puts them last in line for care and life-saving treatment, and imposes an overwhelming burden for the care of the sick and dying. These fundamental threats to women's lives, health and well-being are critical human rights issues—when women's rights are not promoted, protected and fulfilled, gender inequality is the dangerous result. Guaranteeing women's human rights is an indispensable component of the international struggle to combat HIV/AIDS.” www.undp.org/unifem

Women are biologically and culturally more at risk and more vulnerable to HIV/AIDS than men. Although biological vulnerability can be reduced, through for example the use of condoms and better access to health care (for example for the treatment of STIs), the success of these measures is somewhat dependent on a socio-cultural environment in which women and their particular risks, vulnerabilities and responsibilities for social reproduction are considered and respected.

Biologically women are 2 to 4 time more likely than men to be infected by the HI Virus during heterosexual intercourse without a condom. This biological susceptibility is further compounded by numerous socio-cultural practices, such as “dry” sex and gender inequalities such unequal access to health care (which reduces the likelihood of STIs being treated) and poorer nutritional status. Furthermore, the current gender dynamics in much of Africa means that women are unable to negotiate the terms for a sexual encounter and have little control over their husband's activities—

“We see our husbands with wives of men who have died of AIDS. What can we do? If we say no to sex, they'll say pack and go. If we do, where do we go to”
(Participant in a study)?

These cultural gender dynamics are entrenched by economic systems of female dependency on males. This is demonstrated by the inability of commercial sex workers to negotiate safe sexual encounters without reducing the cost of their services.

Not only are women more likely to be infected and least able to access health care—they are also disproportionately burdened with caring for household members, meeting the financial needs of the family, stigmatisation and discrimination. This burden of care is being compounded by government and health department strategies for home-based care. This shifts the burden of cost of care from

governments to households and the burden of care from health facilities to family members with limited knowledge and experience [Machipisa, 2001]. Within the household and family structure this shifting of responsibility for care is placed on women, who are often sick themselves [Benner, Chigudu 2001]. A study in Zimbabwe found that 76 percent of children removed from school to look after sick family members or orphans were girls [Machipisa]. In some societies, HIV positive women face greater stigmatisation, discrimination and rejection than men because women are perceived as carriers of the virus. Reports of women being deprived of familial support, beaten or thrown out of their homes if their status is revealed, even if their husbands were the sources of infection, have become common. The tragedy of Gugu Dlamini who was beaten to death in 2000 in KwaZulu-Natal, after she publicly disclosed her HIV status, is a reminder that women are particularly vulnerable to violence bred by people's fear about HIV/AIDS.

However, women are not passive victims of a disease and the burden of care. There are an increasing number of women's ventures (for example WOFAK—Women Fighting AIDS in Kenya) that are empowering women and enabling them to manage the increasing burdens placed on them by the HIV/AIDS crisis.

Strategies aimed at alleviating the burden of care and vulnerability of women to HIV/AIDS obviously need to have women as the centre of their focus. Women need to be provided with information, knowledge, support groups, income generating opportunities and more equal access to health care and education. However, men cannot be excluded from the process. Gender-based social change will have only limited success if women alone are made aware of the issues. Women need to be empowered to challenge women's subordinate position while men need to be empowered to assist women in meeting the burden of care and reducing their own and their partners' risk of HIV infection.

Scenarios

In the next part of this paper we outline two scenarios. We borrow from the Anglo-American terminology and have a high road where the response to HIV/AIDS is open, destigmatising and nation building, and takes place in a supportive international environment. The low road is where denial continues and AIDS is stigmatising, in addition the global environment is negative, here HIV/AIDS splits and fractures Southern African countries. These stories are written as they have happened and take us up to about 2010. There are two key points to be made: first this is a gross oversimplification the reality will be somewhere in between what is outlined here; secondly the future is something we can individually and collectively change and that is the challenge for SCF and SCF staff.

The high road

There is a growing understanding of the dynamics of the HIV/AIDS epidemic in governments, communities and among donors. People use the modelling tools at many levels to predict the number of infections, illnesses and deaths and make a realistic assessment of the number of

orphans. In addition there is a growing realisation that the epidemic is cutting away at human capital, teachers, doctors and nurses are being lost both to AIDS and emigration. Emigration is not a uniquely South African phenomenon; indeed South Africa is guilty of attracting skilled people from the rest of SADC.

The response to the epidemic occurs at many levels and depends on the resources and leadership by country. The Botswana theme “Towards an AIDS Free Generation” is picked up by other countries in the region and there is increased emphasis on trying to ensure that young people remain uninfected and are cared for and educated. The next generation is crucial. As a result campaigns such as “Love life” anti-AIDS clubs and school-based activities are expanded and, with constant evaluation, made more effective. By 2005 HIV prevalence in the under 25-age group is actually falling while overall it has stabilised in all countries except Angola and the DRC. In both these countries the peace processes have worked but result in increased mobility as soldiers are demobilised and refugees return to their home. This creates the potential for the continued spread of HIV, however the governments and donor agencies have been made aware of this and have developed innovative and realistic interventions. In Zimbabwe and Swaziland political changes have also occurred and allow the governments to address the HIV/AIDS issue.

The greatest challenge is recognized to be to provide care to the sick, welfare for the impoverished and a future for the children. Governments recognise the need for treatment and although (with the exception of Botswana) the general populations do not get access to ART they do have a range of other treatments. By 2006 it is possible for most SADC nationals to gain access to Voluntary Counselling and Testing and learn their status. The new openness and lack of stigma mean people do seek this information, especially before making life decisions such as getting married or having children.

The governments are working closely with traditional healers who have a recognised role in treating HIV and AIDS, indeed in some countries there is talk of providing a per patient subvention provided the healers are registered and compliant with certain standards. The role of communities is recognised as for many home-based care is the only option, the Home Care Kit developed by the AIDS Unit of the University of Pretoria is widely available in SADC and donors are supporting its production and distribution. Health facilities continue to be over extended but clear syndromic care management guidelines mean that patients are seen quickly and provided with the necessary treatments. There is however pressure on the governments to provide ART, and Botswana is facing an increasing problem of “medical migrants”, people who cross into the border and claim to be citizens in order to access ART.

The governments have recognised that illness and death is causing problems in delivery. In particular the human resource intensive sectors of education, health and welfare are losing staff, and the private sector has little compunction about recruiting government employees to meet their needs. Governments have revised their terms and conditions of service. Innovative responses are:

- they try to retain staff beyond the normal retirement age;

- staff are multi-skilled through continued in service training; and
- new cadres of skills are created—for example teachers receive only two years of training in colleges and on receipt of their diplomas are deployed to schools, but they do have the opportunity to gain further qualification through distance learning.
- Secondment of staff from the private sector; NGOs and CBOs.

The overarching problem of increasing poverty and growing numbers of orphans continues to be vexing. In South Africa the basic income grant is seen as a way of supporting vulnerable people and individuals, and while there is some evidence of “orphan farming” the general consensus is that this, and increased pensions, mean that most children have some resources. What is particularly encouraging is the range of innovative responses at the local government level. The emphasis is on supporting community lead efforts, especially those driven by women. Botswana and Namibia are following a similar pattern and the countries are learning from each other.

In the resource constrained countries of the region the problems are more difficult but even here there are some innovative developments. Governments ensure that children not excluded from schools through not being able to afford fees or uniforms. Donors including the Global Fund for AIDS, TB and Malaria, have begun to appreciate the need to transfer resources to communities and mechanisms are being set up to do this. The pilot projects developed in 2004/05 are beginning to be taken to scale. The projects include keeping children in school through fee remissions, uniform and book grants; schemes to ensure orphans are cared for through surrogate mothers; and food and basic necessity packages for the poor and the elderly. NGOs have played a particularly important role in the development of this policy and its implementation.

The role of NGO’s and civil society has other benefits as well. The decision to sub-contract the responsibility for managing AIDS to local governments, businesses and voluntary organizations was a short-term crisis measure. But the new civil connections that were created stimulated greater confidence in society at large, which in turn strengthened confidence in government itself. By the 2010, governments are smaller, but more effective. Tax structures have been redesigned to support civic organisations, while the governments’ own cost of managing AIDS has been met through new taxes and international support.

Although AIDS is hitting economic growth there is a new spirit abroad. The sincere efforts being made by African governments to address poverty and inequality strike a cord with the international community. (The open and innovative approaches to HIV/AIDS are an important trigger to this). By 2006 SADC is experiencing a GNP growth rate of between 3 and 5 percent. It is faster in Mozambique, Zimbabwe and Angola (where reconstruction is boosting economic activity), albeit off a lower base, but is still low in Lesotho and Swaziland. These marginalized countries are benefiting from NEPAD though. NEPAD after getting off to a shaky start is increasingly important as leaders ask each other how they are addressing the epidemic, plan human resource needs on a continental scale, and begin to ensure that they use their clout as trade bloc.

At the international level the debt forgiveness initiatives have finally borne fruit and most of the SADC countries have experienced a large measure of debt relief. The resources freed up are being allocated to the social sectors. The WTO has finally come through with more favourable trade agreements and the SADC countries have greater access to the US and EC markets through bilateral initiatives. These developments in turn are feeding into economic growth.

Private sector investment is increasing, although Africa is still getting the least investment there are encouraging signs of new investment. Companies are moving here to take advantage of growing markets, readily available labour and natural resource endowments. One of the most interesting developments is that larger companies are routinely providing AIDS education, basic health care and condoms. Smaller ones are being assisted through chambers of commerce or industry and associations with larger companies. By 2007 it is routine for companies to strive for the “AIDS Standard” or “kite-mark” and the private sector and community activists are driving this initiative. The Debswana model of requiring people doing business with them to be “AIDS compliant” has spread not just to other companies but also to donors, NGOs and government. Governments are supporting these initiatives through tax breaks for HIV/AIDS training and care. One very interesting development is that an increasing number of companies are following the Debswana lead and providing subsidised ART through medical schemes for employees and spouses. This is prolonging the lives of infected workers and while a simple cost benefit analysis shows that in pure financial terms this is not worth it, the message it sends to workers about how they are valued is increasingly important.

Across the region there is a new optimism. The increased community action and support is significant, as AIDS becomes a normal disease. The language around AIDS has changed. During the worst years of 2001-2004, when HIV-positive people had said, “I will not die alone,” it meant they would spread the HIV so that others would accompany them to the grave. Now, barely six years later, HIV-positive people would hear others say: “You will not die alone, because we are all here with you”.

Despite the stabilising of HIV prevalence, the death rate during the following years continues to rise up to 2010, as those who were infected in the 1990s fall ill and die. Women are hit particularly hard, having been infected in their earliest adult years. They worry above all about the future of their children. They do not want to leave them in institutions, but want to know who is going to care for them after they have died. As early as 2002-3, personal requests for help multiply in all directions—to family, friends, neighbours, bosses and organizations located near by. Everyone is asked to take children in or at least support their education. Companies are also expected to help, not just as organizations, but as communities of individuals who have personal resources to share. It is around the children that the high road of caring compassionate societies is taken. There is also a new gender relationship as women become increasingly mobilised and vocal about the situation.

The Low Road

In this scenario denial continues and there is little leadership or understanding of the terrible impoverishment going on in much of the region. In South Africa and some of its neighbours senior politicians and leaders die in increasing numbers of “pneumonia” and “respiratory failure”. AIDS is never mentioned and the effect of this is to demoralise and bewilder citizens who see clearly that not all is well with their worlds. They are burying their children, brothers and sisters with no acknowledgement and little assistance from their governments.

This means that prevention messages are not received and not believed when they are received. HIV prevalence continues to rise until the susceptible populations are saturated, but worse than this new cohorts of young people are being infected as well. In Botswana, Swaziland, Lesotho and Zimbabwe HIV prevalence levels off at between 35 and 40%, Mozambique, Zambia, and Malawi see HIV prevalence rising into the low 20% range—the poverty, rural urban mix and Muslim populations ensuring lower prevalence rates than elsewhere. South Africa’s national prevalence peaks below 30% but this hides great differences between provinces. In some such as KwaZulu-Natal and Mpumalanga HIV levels are comparable with the worst in the world. In others, Western and Northern Cape the prevalence stays around the 10 % level. By 2006 prevalences have peaked and there signs of hope in Botswana, Zambia and Mozambique, but these are the exceptions.

The political situation is not encouraging. In Angola and the DRC the fragile peace has not held and conflict begins again. There are fresh contingents of troops sent from Namibia, Zimbabwe, Rwanda, and Uganda and these troops play a role in HIV transmission, but more importantly resources are diverted to fund the war. Zimbabwe continues to spiral into political and economic anarchy. AIDS and HIV become increasingly irrelevant in the battle for daily survival. In South Africa’s 2004 election the main victor is apathy, but AIDS is an election issue and the ANC majority is sharply reduced. The leadership become increasingly intransigent and dictatorial.

Those who are wealthy and infected receive private, state of the art medication, but others are dying more quickly without nourishment or hope. In South Africa the language of AIDS reflects a sense of exclusion from the benefits of the new regime. “What did the struggle achieve?” ask many people. A sense of desperation grows. Street demonstrations multiply from people who are demanding drugs, believing these will cure an illness which cannot be cured.

Violence and crime increase, as desperate people look for any way to raise the money to treat the disease. There is a growing division in society as the wealthy retreat behind razor-wired walls or leave the country. Privately, people who have been asking themselves where this HIV comes from, revive the apartheid-era stories that AIDS is spread by white men who want to kill off the black population, and that it is the west that wants to eliminate Africa. Arguments are more and more violently polarized. There is continued denial and blame on all sides. Activists blame the government for not taking the lead. This is whipped up by the press, who seize on every utterance made by the President with gleeful and vitriolic disbelief.

This spills over into Southern Africa's international, African and regional relations. As South Africa is the economic, political and intellectual leader in the region many of the other African countries take their cue from Mbeki. The complete inability to respond to the AIDS epidemic leads to growing frustrations among the international community, and this combined with the collapse of Zimbabwe, the continued conflict in the DRC and political intransigence in Swaziland and Lesotho leads many to shrug their shoulders, ask why they expected anything different and move on to deal with other parts of the world.

Globally debt relief has simply not gotten anywhere, indeed many countries are finding themselves falling deeper into debt. A similar situation applies to the global trade negotiations. The region finds itself increasingly locked out for the lucrative American and EU markets. The result of the political problems is investors are not prepared to put money into the region and economic growth is slow. Over the period to 2007 some momentum is maintained through NEPAD and the "African renaissance"—the view that Africa can develop itself. However by 2007 growth begins to falter and fall below 2 percent per annum.

Unfortunately growth is further hampered by loss of skilled people and in some countries a decline in the market. Many private sector firms and investment advisors are taking a long hard look at what HIV/AIDS may mean to the business climate and they do not like what they see. There is capital flight and the share of Foreign Direct Investment falls further as people regard the HIV risk as significant. The tourist industry throughout the region is particularly badly hit. In addition government operations become increasingly inefficient as civil servants fall ill, taking long periods of sick leave, die or poached by the private sector. Getting permits to operate, tax clearance and so on becomes increasingly difficult and as result bribery and corruption becomes part of the business environment. Poorly paid government employees, supporting increasing numbers of orphans and impoverished relatives are happy to make what ever extra money they can.

Little attention is paid to the impact AIDS is having on education. As AIDS hits families, children are withdrawn from school. Not only can families not afford to educate their children if any financial contribution is required, they increasingly need the children's labour at home. Orphans have little incentive to attend school, and their numbers grow as their parents' die of AIDS. However even those children who manage to get to school are getting a lower quality of education. Teachers are falling ill and leaving their classrooms for long periods. Nor can they be easily replaced as government conditions of service allow for lengthy periods of sick leave and medical boarding that can take months. Things are made even worse because the epidemic also cuts a swathe through the private sector workforce. In order to replace staff, teachers are poached by the private sector (a chemistry teacher can be turned into an industrial chemist, a mathematician into an accountant). The result is that education deteriorates further and, with jobs hard to find, people question its value.

In this climate, many health professionals find they are unable to work in the government system. There is little they can offer patients, and they feel at risk. The public health system begins to

collapse while in society at large many people are “just hanging on”. They hope that things will improve but have little expectation of this happening. Worse, with the lack of any clear policy on the treatment of AIDS, there is a growing black market in anti-retroviral drugs. This market is often based on illegal import licences obtained through bribery. In many cases these drugs are sub-standard or fake. Even legal drugs are often used improperly, or shared with others, reducing their efficacy. The result is a virus that mutates quickly. Soon there is no effective treatment available for the strains of HIV in South Africa.

The result in this bleak scenario is that skill flight increases in momentum and the crisis of confidence in the region deepens. The land issue once a burning problem becomes less important, morbidity and mortality mean that there is land enough to spare but the skills and capital to cultivate it are no longer available. The AIDS related food crisis of 2002/03 deepens and malnutrition becomes the norm. This further fuels the epidemic.

Peoples’ vision narrows as they seek to protect and support their immediate families. Society fractures into interest groups or coalesces around powerful people including criminals and warlords. This is clearly evident by 2006, and results in further economic stagnation. When the impact of AIDS is added, the numbers show that economic activity has actually declined. By 2007 skills flight is at an all time high and investors choose to avoid the region. Southern Africans are not politically engaged, and will not hold the government or state bureaucracy to account. They have come to expect and accept poor service and the need to pay bribes for ordinary government services. With little employment available, there is an increase in government patronage jobs, causing a further decline in the quality of government service

In Swaziland and Lesotho events move more swiftly as they are so much poorer at the start; by 2007 the countries seem to be in terminal meltdown. Mozambique manages to keep HIV prevalence lower, which is attributed to its poverty, Catholicism and poor infrastructure. But the “bad neighbour” effects of being located next to South Africa slow growth there. Botswana is the exception in this story. Here powerful government leadership, the willingness to import labour and the fact that it is the global test case for response to the epidemic encourages massive inflows of aid, helping the economy to grow, even when diamond sales drop off. A major new economic activity is health care and the country attracts medical “tourists” and medical refugees from as far away as Kenya and Nigeria. However the proximity to South Africa and Zimbabwe is detrimental to economic growth and development efforts.

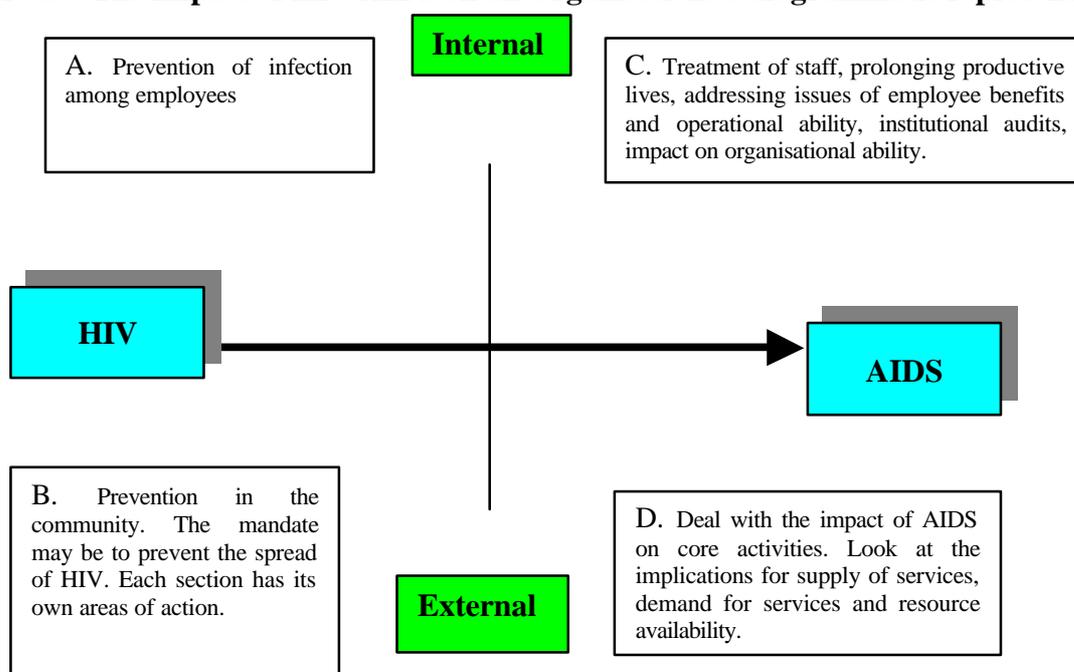
By the end of our scenario period (2010) there has been an additional and very worrying development with regard to the rights and status of women. There has been a general move towards conservatism and tradition. However a major problem is that the gender ratio has changed. There are now about 85 women to every 100 men (a reversal of the previous 102 women to 100 men). The loss of women is particularly marked in the under 30 age group. This leads to a commoditisation of women, they are regarded as valuable for care and their reproductive capacity.

Effectively in the low road the development gains of the past few decades are reversed in every arena. Political, economic and social deterioration seems to feed on each other and the long term prospect look bleak.

Looking to the future

Scenarios are possible futures. But the advantage of the future is that, within the rules of the game, we can change it. The question is how and where and this is what SCF needs to consider now. One way to do this is to use the framework developed some years ago to look at the impact on government. Here we look at the disease dynamic from HIV to AIDS (the horizontal axis in the figure) and respond to its external and internal impact on government (the vertical axis). Both the epidemic and people move along the line from HIV to AIDS. If the spread of HIV can be contained then there is less need to respond to AIDS. Where there is a serious AIDS epidemic, prevention remains a priority for the uninfected and those who are becoming sexually active.

Figure 8: The Impact of HIV/AIDS on an Organisation: a diagrammatic representation



- Box A concerns internal priorities with regard to HIV. Key is prevention of infection among the staff. Examples of such responses include provision of education and condoms, less common is addressing how the organisation works—for example do they post spouses apart from each other?
- Box B shows the responsibility for the organisation to its “clients”. AIDS control may be part of the activities, but where there is a large epidemic each section or department should look at their activities and consider what they might do differently.
- Box C asks what the impact of AIDS illness and death will be among the organisations employees.

- Box D examines the effect of AIDS on core business. What does the increase in deaths and illness mean for service provision such as education, the ability to supply that education and the demand for it.

Options and Decisions

What can be done to ensure we make the future in the best possible way for the people and specially the children of the region.

What is the role of SCF and what can it do (note that HEARD can not write this—simply give some pointers).

Areas I believe you need to consider are:

- SCF as an organisation—how you treat your employees and the people you work with.
- SCF can demand “AIDS Compliance” from its contractors, see the Debswana example [Barnett et al, 2002].
- The advocacy role in national and international fora.
- The role of SCF in moving other NGO’s and CBOs.
- The issue of gender and HIV.
- At a programmatic level you have a better idea of what you do and how you do it but you might think about targets and scaling up.

Appendix 1: Medical Interventions Assumptions

	<u>Disease Prevention</u> <i>a. vaccination against HIV</i> <i>b. prevention of mother to child transmission (PMTCT)</i>	<u>Disease Management</u> <i>a. treatment of opportunistic infections</i> <i>b. anti-retroviral therapy for late stage HIV infection</i>	<u>Disease Cure</u> <i>ridding body of HIV virus</i>
Medical Science	Vaccine available in 2010 to 2015 time frame. Mother-to-Child (MTCT) prevention available now.	Opportunistic infection treatment is available. ARVs (anti-retroviral) become available 2001 onwards, but coping with mutations is a constant battle which consumes resources. Mutants do not become more virulent.	No current drugs available for this. May be invented through genetically engineered agents customised for an individual's genes. Available in 2015 to 2030 time frame.
Affordable?	PMTCT affordable in South Africa, Namibia and Botswana Vaccine affordable in 2010 to 2015 time frame.	Opportunistic infection treatment affordable. ARVs not generally affordable outside private sector in next 20 years, except in Botswana where they are made available through government and donors as a "national pilot project" from 2002 onwards.	Not affordable for next 20 years.
Deliverable?	The same for both PMTCT and vaccine, but scenario dependant: Good in "high road" poor in "low road".	Infrastructure not adequate for delivery for the next 10 years, except perhaps Botswana.	An entirely new infrastructure is required. Not available for 20 years.
Acceptable?	High	Opportunistic infection treatment acceptable ARVs limited by side-effects.	Dubious
Effectiveness	High	ARVs influenced by nutrition, discipline and hygiene.	Unknown

References

- Barnett, T. and Whiteside, A. 2002: *AIDS in the Twenty-First Century: Disease and Globalisation*, Palgrave Macmillan, Hampshire.
- Barnett, A. and Whiteside, A.: *Guidelines for the Social and Economic Impact Studies of HIV/AIDS: Preparation and Execution*, UNAIDS Best Practice Geneva 2000.
- Barnett, A., Fantan, T., Mbakile, B. & Whiteside, A.: *The Private Sector Responds to the Epidemic: Debswana—A Global Benchmark*, UNAIDS Best Practice, Geneva, 2002.
- Benner, H. 2001: Women Bearing the Burden of Care. Accessed via the World Wide Web <http://www.globalfundforwomen.org/4news/newsletter/2001-08/burdenofcare.html> 21/06/02. Global Fund for Women Newsletter August 2001.
- Chigudu, H. 2001: How African Women Are Coping With the HIV/AIDS Crisis. Accessed via the World Wide Web <http://www.globalfundforwomen.org/4news/newsletter/2001-08/africanwomen.html> 21/06/02. Global Fund for Women Newsletter August 2001.
- Department of Health, Republic of South Africa, 2000: *National HIV and Syphilis Sero-prevalence Survey of Women Attending Public Antenatal Clinics in South Africa*.
- Government of Botswana: *HIV Sero-Prevalence Sentinel Survey Amongst Pregnant Women And Men With Sexually Transmitted Diseases A Technical Report*, Gaborone, Botswana, December 2001
- Kingdom of Swaziland, 2000: *7th HIV Sentinel Serosurveillance Report*, Year 2000.
- Machipisa, L. 2001: Women and girls carry the heaviest burden. Accessed via World Wide Web www.ipsnews.net/hivaids/section1_3.shtml 21/06/02.
- The POLICY Project, 2001: *HIV/AIDS in Southern Africa: Background, Projections, Impacts, and Interventions*, October 2001, pp 18.
- Stanecki, K. A. 2000: AIDS in the 21st Century. *World Population Profile 2000*, United States Bureau of the Census, Population Division, International Programme Centre, Washington, DC,.
- Sunter, C. 1987: *The World and South Africa in the 1990s*, Human & Rousseau Tafelberg, Cape Town.
- Sunter, C. and Ilbury, C. 2001: *The Mind of a Fox: Scenario Planning in Action*, Human & Rousseau Tafelberg, Cape Town.
- UNAIDS: *AIDS in Africa: Country by Country Report 1998, 1999, 2002*, UNAIDS, Geneva.
- US Bureau of the Census, *World Population Profile: 1998*, Washington DC, 1998
- United Nations Development Programme: *Human Development Report 1996,1997, 1999, and 2001*, Oxford University Press, New York, 1997, 1999, 2001.
- Whiteside, A. and Sunter, C. 2000: *AIDS the Challenge for South Africa*, Human and Rousseau, Cape Town.