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**Regional Differences in HIV Prevalence in the light of Prevailing Socio-economic
Conditions: A Preliminary Comparison of Northeastern and Southern Africa**

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Abstract: Preliminary investigation shows that HIV prevalence in most of the Northeast African countries is lower than the prevalence in their Southern Africa counterparts. This has led some in the Northeast to think that their situation is much better, and they should not be worrying as much. This however is a mistake. Since prevalence levels adjust through changes in new infections (incidence) and death, there is some indication that the latter may outweigh in the Northeast. The paper argues that given the much better economic and social welfare conditions in the South, the infected are likely to live longer than their likes in the Northeast. As a result, the prevalence level in the South is likely to stay higher even if the level of incidence is held equal. The socio-economic factors behind the divergence in prevalence in the two parts of Sub-Sahara Africa are explored using data from the two regions. The paper is exploratory in its intent and scope. Its primary aim is to elicit dialogue around these issues and provoke further research to determine the connections between socio-economic conditions and HIV prevalence and incidence. It sketches out the need for in-depth analyses of the suggested hypotheses. The paper calls for much vigorous efforts in combating the epidemic in the Northeast as well as in the Southern part of the continent.

IGAD, SADC, mainstreaming, economic factors, social factors

I. Introduction and Background

The genesis to this paper is the reaction the author often receives on the state of HIV/AIDS in the different parts of Sub-Saharan Africa (SSA)¹. First, discussion about HIV with people from Northeastern African countries quickly delves into a comparison of the prevalence among the Northeastern and Southern African countries². Those in the Northeast, based on popular information, consider their countries (and their people) to be in a better state than the people in the other region³. This raises serious concern if it also leads to complacency and a loosening of the vigor with which the epidemic is addressed. It also fails to recognize that there are pockets of high prevalence within the Northeastern African region despite the lower national-level rates in most of the countries. More importantly, such an outlook could be a lack of understanding of the underlying factors behind the lower prevalence in the Northeast.

Second, trying to find the reasons why the Southern African region is the epicenter of the epidemic evokes a similar discourse. More in particular, the question focuses on Botswana – a country otherwise commended for its continuously sound economic and social policies, democratic governance and long and uninterrupted period of safety and security in spite of its location. Yet, Botswana records the highest prevalence level in the world.

The third situation that attracts significant discussion is Uganda's success. A question is often raised as to what Uganda did differently to muster such a sharp decline in its HIV prevalence.

These three points are very complex and require thorough studies addressing the economic, social, political and cultural factors that contribute to the changes in the epidemic in each of the three countries, as well as the countries in the two groupings. Such studies should address the following questions. Is there indeed a difference in HIV prevalence in the two groups of countries? Which of the two factors that drive prevalence (i.e. incidence and mortality) out-weigh in one or the other group? Lastly, and more importantly, are there economic, social, political and cultural factors that contribute to these dynamics? This paper posits that HIV prevalence in Southern Africa is higher than in Northeastern Africa. It also hypothesizes that at least part of the explanation for the lower prevalence in the Northeastern

African countries lies in relatively quicker deaths accompanying HIV/AIDS there. It is proposed that the prevalence rate in the Southern African countries and the gap between the Northeastern and Southern groups of countries could rise further with the higher adoption of ARV in the South⁴. It uses existing publicly available data and some anecdotal evidence to put those points across. It is to be noted that time series epidemiological and demographic data are unavailable for most of the countries. Thus, the argument presented here will have to be refined based on the evidence to be accumulated in the future.

The paper is neither exhaustive nor definitive. Its aim is to provide a preliminary exploration of the state of HIV in these two regions, and hopes to set in motion dialogue and debate to find out if such cross-country investigations will shed additional light in the understanding of the epidemic from the point of the social sciences and to improve the design of policies and programs of intervention. It is intended to provoke others to delve deeper into liking epidemiological and demographic phenomena, on the one side, and economic and social factors, on the other, and in doing so, to build a bridge between these different disciplines.

The paper is presented in four sections. In Section II, it discusses the prevalence rate and the trend in the two groups of countries. Section III provides the rationale for the hypothesis alluded to above. Section IV concludes the paper.

II. Status and Short-Term Trends in HIV Prevalence

Tables I and II summarize the estimates of prevalence nation-wide and for special groups, respectively, for the two groups of countries. As shown in Table I, at the end of 2001, about 14.69 million people (adults and children) were estimated to have been HIV positive in SADC⁵. Excluding HIV positive children, about 13.7 percent of adults were positive. Comparatively, about 5.75 million people were estimated to have been sero-positive in IGAD or about 6.8 percent of IGAD's adult population. IGAD's prevalence rate was estimated exactly at about half of the prevalence in SADC. Examining the prevalence among individual countries, only Kenya, an IGAD country, registered a prevalence rate comparable to those of SADC⁶.

Taking the data on selected population groups, the same pattern is noted. Table II provides data on the median prevalence rate among antenatal clinic attendees (ANC), male STI patients, and female sex workers in urban areas. Among IGAD members, Kenya registered the highest prevalence rate (15.3 percent) for ANC⁷. Nine countries in SADC had prevalence rate as high or higher than Kenya's. Among male STI patients, Ethiopia registered the highest (37.5 percent) in IGAD. Eight countries in SADC reported a level higher than that. In Ethiopia, 73.7 percent of urban female sex workers were reported to be positive – the highest in IGAD. Two countries in SADC for which data were reported exceeded that level. These figures, although referring to different years, to some extent reinforce the findings based on nation-wide data. Based on these data, it appears prevalence rate of HIV is higher (or much higher) in SADC than in IGAD members.

The death rate of AIDS patients (i.e. estimated as deaths during 2001 as a proportion of HIV positive people) for the two groups of countries is about equal – about 8 percent each (WHO/UNAIDS, 2002; Ngom and Clark)⁸. During 2001, 1.18 million SADC inhabitants and close to 0.48 million people of IGAD died of AIDS. In terms of death rate, Uganda with a rate of 14.0 percent registered the highest both among IGAD and SADC members⁹.

A similar pattern emerges using data for 1999. As shown in Table III, in 1999, it was estimated that close to a million people of SADC died of AIDS; whereas the comparable estimate of mortality for IGAD was 0.57 million people. In terms of HIV/AIDS-specific mortality rate, IGAD's was 9.6 percent, while SADC's reached 8.3 percent. Again, Uganda had the highest mortality rate of 13.4 percent (i.e. a survival rate of 7.5 years). The mortality rate for Ethiopia was 9.3 percent. Among SADC, only Angola, Namibia, Tanzania, Zambia and Zimbabwe experienced mortality rates in excess of Ethiopia's. The high average mortality of IGAD and the very high mortality rates for Ethiopia and Uganda are very important points to which the report will come back to later.

Since vital statistics system in SSA is generally weak, it is difficult to confirm the difference in mortality in the two groups of countries using independent sources. For instance, of 77 countries worldwide that report registered deaths to WHO, including the coverage and completeness of the data, only two, namely Mauritius and South Africa, were in Africa (SSA and North Africa combined). Even in South Africa, despite significant improvements in the

registration of deaths between 1990 and 2000, deaths resulting from AIDS have been found to be unreliable due to under- or mis-reporting.

Table I (last column) provides the direction of change in the estimated number of HIV positive people between end of 1999 and 2001. By the end of 2001, about 1.75 million more people in SADC had been infected by the epidemic compared to end of 1999. Prevalence level increased in all countries. To the contrary, the number of people infected among IGAD countries was lower at the end of 2001 than 1999 by a number close to 1 million. AIDS is an incurable disease. Neither is it possible to expect these many people to have out-migrated to countries outside of the region. The key question is therefore to find out what had happened to them. The high death rate reported above (at least for Ethiopia and Uganda in 1999 and Uganda in 2001) and the disappearance of these many people from the prevalence estimates is a central point to the thesis of this paper¹¹. Looking at individual countries of IGAD, the trend in prevalence, among those that reported data, was positive only in Kenya. The number of HIV positive people both in Ethiopia and Uganda actually declined to more than offset the increase in Kenya. Indeed, the methodology of estimation between 1999 and 2001 changed and more recent parameters were used for estimating figures for 2001. Thus, part of the difference could be attributed to this factor.

III. Rationalizing the Difference in Prevalence

As alluded to above, the differences in prevalence in the Northeastern and Southern African countries could be attributed partly to differences in the phase of the epidemic in the two groups of countries and in the methodology and practices in statistical collection¹¹. But these two factors alone cannot be taken to explain the entire or much of the difference or, for that matter, the factors that drive the epidemic in the two groups of countries. It is argued here that incidence (new infections) are likely to be higher, and once infected people are likely to live longer in the SADC group of countries due to differences in several economic and social factors. These factors include, among others, the relative prosperity of SADC, the difference in the structure of their economies, differences in urbanization and settlement concentrations, differences in social welfare and amenities, and differences in food and nutritional conditions. Wealth, modern economic structures, and concentrated settlements seem to make people more vulnerable. Once infected, better social welfare and amenities, and better food and nutritional

conditions and wealth seem to make it possible for people to live longer. Let us review each of these factors in turn.

Table IV provides some economic and social indicators for selected countries of SADC (i.e. Botswana, South Africa and Zimbabwe) and IGAD (Ethiopia, Kenya and Uganda). In the next few paragraphs, reference to SADC and IGAD relates to these countries. Other countries would be introduced when relevant either to reinforce a point or to present a different perspective (anomalies).

The three SADC countries command much higher income and human development indicators (HDI)¹². In 1999, GNP per capita (in purchasing power parity terms -- PPP) in SADC ranged between US\$2500 and US\$8300. In IGAD, only Uganda had GNP per capita in excess of US\$1000. A positive relationship between GDP (or GNP) per capita and HIV prevalence has been established in other studies as well (Whiteside and Others, 2003, UNDP HDI, 2003; World Bank, 1999). Income was much more concentrated in SADC, implying that GNP per capita of some groups of these societies are much higher than the averages shown. Even then, the relatively poorer in SADC are likely to generate much higher income than their likes in IGAD. The HDI for Zimbabwe, the lowest among the three SADC countries, reached 0.554. Whereas Kenya, with the highest indicator among the IGAD members had an index of only 0.514 – lower than Zimbabwe's. SADC members are much more literate (less illiterate). In 1998, adult illiteracy, at 25 percent, was highest in Botswana – the worst performer among the three. Comparatively, only Kenya performed better than Botswana among the IGAD members. Ethiopia, the worst performer among the two groups, recorded an adult illiteracy of 64 percent. The picture is similar in terms of primary enrollment in education. SADC members had achieved enrollment of 80 percent and over.

Understanding of the social and economic status of the two groups of countries is important since wealth and education seem to make people more vulnerable at least at the initial stages of the epidemic. A study of women ages 19-37 infected with HIV by their partners' socio-economic status in Kigali, Rwanda, a member of neither group, showed that the percentage of women infected increased with the increase in the educational status and income of the partner. The probability of infection was greater among men and women with higher incomes, schooling, and higher paying occupations. Based on data from ANCs showed that among women whose partners had education 0-4 years, about 18 percent of the women

were infected; for education of 8-11 years, the corresponding infection rate was 34 percent. For monthly income between 1-9999 Rwanda Franks, 25 percent of the women were infected, while the infection rate for the highest income of over 10000 Rwandan Franks was 35 percent. (Allen and Others, 1991). A World Bank study, based on data from 72 developing countries, showed that urban adult HIV prevalence declined with increasing GNP per capita (1994 Dollars), whereas prevalence increased together with the concentration of income (using the Gini Coefficient) (World Bank, 1999). Likewise, based on extensive surveys of rural areas in Mwanza District in Tanzania and Rakai District in Uganda, prevalence among both men and women increased with the increase in the educational achievement of the respondent¹⁴. If we can generalize based on these findings, since the SADC members are relatively wealthier and better educated, it seems that they are more likely to be infected compared to their IGAD counterparts¹². As indicated below, this relationship is however likely to change at a later stage of the epidemic.

The structure of economies of the two groups of countries is also different. IGAD members, with the exception to some extent of Kenya, are dominated by small-scale peasant agriculture and large-scale pastoralism. In SADC, mining, manufacturing and commercial agriculture are more important. The exceptions are Malawi and Mozambique, among the big countries, where small-scale agriculture is important. Taking the share of value added in industrial production (including mining) in GDP as a proxy for the structure of the economy, the SADC group recorded 24 to 44 percent in 2001, whereas the corresponding figures for IGAD were 11 to 19 percent. Mining alone accounted for 40 percent in Botswana's GDP and 13 percent in South Africa's in 1999. In Zambia, not listed in the table, about a quarter of GDP is accounted for by mining and allied industries. The share of mining in the IGAD members was much lower than 10 percent.

The structures of these economies imply different forms of settlement and population concentration. Mining, manufacturing and commercial agriculture tend to cause concentrated settlements and favor urbanization, while small-scale agriculture and pastoralism disperse people over a larger area. In Botswana, South Africa and Zambia 50 percent (or higher) of the population live in urban areas. However, corresponding to their economic structure, Malawi and Mozambique are primarily rural. In IGAD, with the exception of Kenya, which has a third of its population living in urban areas, the others are mainly rural. In Uganda and Ethiopia, only 14 percent and 17 percent of the population, respectively, live in urban areas.

Due to the well-built infrastructure in transportation, power and telecommunication network, Botswana, for instance, could be considered as one city spread over a large expanse of land. Since most of the roads are asphalted, traveling from Gaborone, the capital, to a small town at some corner of the country takes a small fraction of what it would take in Ethiopia or Uganda to travel the same distance. In as much as a modern transportation system is good for the movement of people and goods, it is also efficient in the spread of infectious diseases, including HIV. Because of the land-locked location of several countries in SADC, long-haul cross-border transportation has been common. Unlike IGAD members, the countries of SADC are relatively better traversed by road and rail. HIV prevalence follows the same path. This is true in Northeastern Africa as well. HIV prevalence is relatively higher (as high or even higher than the Southern counterparts) in the towns and cities along the Addis-Djibouti corridor and the Great Northern Corridor traversing Kenya, Uganda and the Great Lakes countries.

In addition to the overall better transportation networks, in SADC large-scale cross-border, permanent or temporary migration to work in the mines and commercial farms as daily labor is common and has been the case for over a hundred years. These migrants provide an incentive for large settlements to crop up around the mines or commercial farms. These settlements house people who will provide services to the migrants.

The structure of SADC's economy and the accompanying settlement structure make the SADC people more vulnerable to HIV. Peasant farmers and pastoralists are less likely to get engaged in risky behavior and be infected (UNAIDS, 2003)¹³. For instance, the study on Rwanda cited above shows a prevalence of 9 percent for women whose partners were farmers (a rural activity), and 22-38 percent for women whose partners were in the military, private sector and/or civil servants, occupations that are concentrated in urban areas than rural (Allen & Others, 1991). In Ethiopia, rural areas are less infected than urban areas (MOH, 2002). UNAIDS concluded "... improved and expanded surveillance has shown that HIV prevalence in rural areas is lower than anticipated that the differences between infection levels in rural and urban areas in some countries are greater than previously thought..." In Ethiopia, almost 72,000 army recruits were tested for HIV during 1999-2000. In urban and rural recruits, HIV prevalence was 7.3% and 3.8%, respectively." (UNAIDS, 2003). Moreover, temporary relative prosperity that accompanies good harvest or increased commodity prices is not good

for HIV prevention. In Ethiopia, for instance, many observers think that the good harvest in 2001-02 in some parts of the country may have exposed many rural dwellers to the epidemic¹⁴.

As much as there are factors that render SADC more vulnerable and more at risk than IGAD, these same factors, in addition to some others, provide a boost for longer life for the infected. Thus, even if infection levels are equal, prevalence (the cumulative infection) could rise as long as those infected live longer in one region and not the other. This phenomenon characterizes SADC. To the contrary, there are reasons, as outlined above, to believe that new infections are likely to be lower in IGAD but also that infected people die quicker. The differential in life expectancy of the infected is likely to increase with the increased introduction of ARV therapy in SADC. Let us review why the infected live longer in SADC.

HIV destroys people's immunity. By the time, HIV advances to AIDS, the immunity of those infected is weakened so that the sufferers die from opportunistic diseases that are not otherwise fatal. To keep people alive longer adequate food supply, better nutrition, access to health services and amenities are essential. In countries where these are satisfied the infected are likely to live longer than otherwise.

Death is more common in Northeastern African countries even before the advent of HIV. As shown in Table IV, under 5 mortality in (U5M) in 1980, long before HIV became common, was much higher in Northeastern Africa rather than Southern Africa. For instance, in 1980, among the three SADC countries in the Table, Zimbabwe, with the highest U5M recorded mortality of 125 per 1000 children, whereas, in Kenya, U5M, in the best performer of the IGAD members, was 124 – about equal with Zimbabwe's. Nutritional conditions of children in IGAD, even in more recent years, were worse than SADC's. For instance, between 1992-98, less than 20 percent of children under 5 were malnourished in SADC compared to 20-50 percent in IGAD.

Due to the poor sanitary conditions people in Northeastern Africa are more likely to be inflicted by infectious diseases such as diarrhea and coughing, etc. Once sick with these less potent diseases, due to the poor access to health services, they are likely to fall sick longer. This is compounded by the poor food supply and nutritional conditions (UNWHO/FAO, 2003). In the three SADC countries, about 45-66 percent of the urban population had access

to some form of improved sanitation system. In Ethiopia, the only country for which data was available, the corresponding figure stood at about 8 percent. Conditions in Kenya and Uganda could be better than Ethiopia's but may not compare to those of the SADC members.

Likewise, access to essential drugs, used as a proxy for access to health services, reveals a similar advantage in favor of SADC countries. Nutrition-wise, between 1996-98, a third to half of the population of IGAD was malnourished; whereas a maximum of a third was in a similar predicament in SADC.

The factors dealt with above base the argument on economic and human capital grounds. These are reinforced by social and cultural factors, particularly the issue of male circumcision and alcoholism. There is considerable evidence indicating that male circumcision makes people less vulnerable to HIV infection (van Dam, 2000)¹⁵. Due to religious factors, proportionately more males of Northeastern Africa are circumcised. Most males, if not all, in Ethiopia, Sudan, Somalia, and Djibouti and a fairly large number of male Kenyans and Ugandans (i.e. the Moslems and some other ethnic groups) are circumcised. The positive impact is compounded by the prohibition of alcohol consumption and the practice of holding sanctioned multiple partners, but in a closed manner. There are males of many ethnic/religious groups in Southern Africa that circumcise latter on in life as part of the initiation into adulthood, these however are not thought to be large in proportion to the total male population.

The conditions above, particularly those relating to economic and human capital aspects, depict more serious deprivation in Northeastern Africa compared to Southern Africa. If illiteracy, poverty, and social deprivation (in terms of poorer access to social services and amenities, including health) and malnutrition predispose people to sickness and death, Northeast African are likely to die prematurely even in the absence of HIV/AIDS¹⁶. With HIV/AIDS, the proposal that HIV/AIDS infected people in IGAD die much faster will not be far-fetched. It will not be unrealistic to assume that some of the Ethiopians and Ugandans, numbering over a million that disappeared from the prevalence statistic may have actually died of the epidemic. As shown in Table I, the mortality rate of the infected people in Uganda in 2001 was 14 percent, essentially implying that an infected person in Uganda lives, on the average, 7.1 years; while in Zambia, such a person could live about 10 years. The corresponding life expectancies post-infection were 12.7 years in Botswana, 13.9 years in South Africa, and 11.5 years in Zimbabwe.

The picture becomes more stark using the data for 1999. On the average, the people of SADC lived 12 years post-infection, whereas those in IGAD lived slightly shorter – 10.4 years. In Uganda, where life is shortened most sharply, the infected people lived 7.5 years. On the other side, the estimated survival for all countries in SADC in 1999 was higher than Uganda's. Moreover, except for Tanzania, Zambia and Zimbabwe, the estimated life expectancy for the other SADC was higher than IGAD's average.

Thus, structural factors, inherent in the economic and social (human capital) conditions, including urbanization and better infrastructure development in Southern Africa seem to put the people at risk and render them more vulnerable to HIV infection. But, once infected, these same factors, together with better access to services and better nutrition, seem to help stretch out the life of the infected people. To the contrary, incidence (new infections) is likely to be fewer in Northeastern Africa, but those infected seem to die sooner. Thus, the lower prevalence in Northeastern Africa could possibly be a reflection of higher mortality¹⁷.

Several studies, including (UNDP 2002; Low-Beer and Stoneburner, 2003; Hogle, 2002) indicate that the decline in prevalence in Uganda are attributable to changes in sexual behaviour as reflected by delays in sexual activity, faithfulness to one sexual partner, decline in opportunistic sex, and increased use of condoms. The latter study states that "... Some have postulated that the decline in sero-prevalence was primarily a result of so many people succumbing to the disease that the rate of new infections was simply outweighed by the number of AIDS deaths. ...” Low-Beer and Stoneburner then argue why that is not actually the case. In spite of their justification however it is still debated that the behavioural changes enumerated in their study could reduce incidence (new infections) compared to the situation without the change but not the prevalence level. They essentially imply that prevalence would continue to rise although at a lower pace.

IV. Conclusion

Two important conclusions are in order. First, this study is an attempt at pooling together epidemiological, demographic, economic and some social data to construct a plausible picture of the differences in the state and evolution of the epidemic in SADC and IGAD countries. To speak with certainty the study will have to be deepened in several

respects. It would have to be reinforced through further examination of micro- and macro-data particularly in the epidemiological and demographic areas. Despite preliminary indications, are there real differences in the incidence, death and prevalence in HIV in the two group of countries or what is gleaned from the data is only a reflection of the way the model is designed and parameters fed? In the medium-term, countries would be encouraged to strengthen and improve their vital statistic system; and at least health systems should be in a position to capture and report mortality and underlying causes of death on a regular bases. In some countries, burials are done at specific places, thus if a machinery is established at churches or mosques or funeral homes to capture these event, it would be relatively easy to assemble such data. This would then facilitate establishing the link between mortality and socio-economic variables.

On the same vein, current epidemiological and demographic projections would need to take into account economic and social factors in their modeling effort, and include other specialists (i.e. economists, nutritionists, anthropologists, etc.) in the Reference Groups, to ensure that other discipline provide their insight into the issue.

The second remark emanates from the findings of the study. If higher education, better income, urbanization, industrialization, etc. make people more vulnerable and put them at greater risk of HIV infection, does that mean that those countries in Northeastern Africa should not send their children to school, or forget their efforts to increase incomes or keep their people rural? Similarly, shouldn't SADC aim for better income and human capital conditions? The answer, of course, is to the contrary.

In the first place, there is some evidence that education will enhance behavioral change and render some less vulnerable at least at a later stage of the epidemic. As the epidemic progressed, and as the transmission and prevention methods became better understood, the more educated took advantage of the educational and other preventive programs quickly, and changed their behaviour. As a result, prevalence declined among the elite and non-poor while the opposite was the case with the less educated and the poor as the epidemic matured. For instance, HIV prevalence rate among pregnant women 15-24 years-old in Uganda declined substantially between 1991-94 and 1995-97 for all educational levels (including illiterate ones), but the decline was most sharp for those with secondary and higher

education (Kilian, 1999)¹⁷. Thus, education and poverty reduction are important instruments in the management of HIV/AIDS.

More importantly, it is the manner in which development programs are conceived and implemented that determines the pace at which HIV transmission occurs. If the bi-directional impact of HIV is properly assessed and understood at the design of policies and programs and proper remedial measures put in place at the start, major damages are likely to be averted. In this process, asking the following three questions and finding the proper response would be useful. How does a certain development initiative (policy or programmatic) affect the spread of HIV? Conversely, how does the spread of HIV affect the success in meeting the goals of the development initiative? Once these two questions are thought through, the third questions should be addressed; i.e. what policies and strategies should be formulated and implemented to address the shortcoming identified through the two previous questions? Every development initiative should be subjected to the three questions¹⁸. This essentially means that HIV should be mainstreamed into each and every social and economic program.

Despite the declaration of HIV as a national emergency in many countries of IGAD as well as SADC, the concept of mainstreaming is not properly understood or consciously and persistently carried out. Although national strategic plans are in place and they claim to be multi-sectoral, one area of their weakness is that these plans fail to be truly multi-sectoral. None of the plans take each sector (or ministry) and respond to the three questions alluded to above, and put HIV well integrated into their sectoral program.

Lastly, it is important to underline that HIV is inflicting series damage to the people of Northeastern Africa despite the lower prevalence level there. The relatively fewer people that are being infected are dying faster, and the statistics look relatively better since the people have already perished to appear in the statistics. The disparity between IGAD and SADC is likely to rise as SADC members put more people on ARV therapy and succeed in averting premature mortality.

Table I: HIV/AIDS National Estimates, end 2001

Countries & Regions	Estimated Number of People Living with HIV/AIDS					Total AIDS Deaths, '000	Deaths as % of Prevalence	Ratio of HIV+ve Women %	Changes – Prevalence 1999-2001 '000
	Adults & Children, '000	Adults (15-49 yrs), '000	Adults Rate %	Adult Women, '000	Children, '000				
Sub-Sahara	28,500.0	26,000.0	9.0	15,000.0	2,600.0	2,200.0	7.7	57.5	+
SADC	14,690.7	13,180.7	13.7	7,719.4	1,261.0	1,180	8.0	58.6	+1750.2
Angola	350.0	320.0	5.5	190.0	37.0	24.0	6.9	59.4	+
Botswana	330.0	300.0	38.8	170.0	28.0	26.0	7.9	56.7	+
DRC	1,300.0	1,100.0	4.9	670.0	170.0	120.0	9.2	60.9	+
Lesotho	360.0	330.0	31.0	180.0	27.0	25.0	6.9	54.5	+
Malawi	850.0	780.0	15.0	440.0	65.0	80.0	9.4	56.4	+
Mauritius	0.7	0.7	0.1	0.4	0.1	0.1	--	50.0	+
Mozambique	1,100.0	1,000.0	13.0	630.0	80.0	60.0	5.5	63.0	+
Namibia	230.0	200.0	22.5	110.0	30.0	13.0	5.7	55.0	+
S. Africa	5,000.0	4,700.0	20.1	2,700.0	250.0	360.0	7.2	57.4	+
Swaziland	170	150.0	33.4	89.0	14.0	12.0	7.1	59.3	+
Tanzania	1,500.0	1,300.0	7.8	750.0	170.0	140.0	9.3	57.7	+
Zambia	1,200.0	1,000.0	21.5	590.0	150.0	120.0	10.0	59.0	+
Zimbabwe	2,300.0	2,000.0	33.7	1,200.0	240.0	200.0	8.7	60.0	+
IGAD	5,748.0	5,212.0	6.8	3,040.0	594.0	457.4	8.0	58.3	-980.0
Djibouti	--	--	--	--	--	--	--	--	?
Eritrea	55.0	49.0	2.8	30.0	4.0	0.4	0.6	61.2	?
Ethiopia	2,100.0	1,900.0	6.4	1,100.0	230.0	160.0	7.6	57.9	-
Kenya	2,500.0	2,300.0	15.0	1,400.0	220.0	190.0	7.6	60.9	+
Somalia	43.0	43.0	1.0	--	--	--	--	--	?
Sudan	450.0	410.0	2.6	230.0	30.0	23.0	5.1	56.1	?
Uganda	600.0	510.0	5.0	280.0	110.0	84.0	14.0	54.9	-

Source: UNAIDS, Report on the Global HIV/AIDS Epidemic, July 2002

Table II: HIV Prevalence (%), Selected Population Groups

Countries & Regions	<u>Anti-Natal Clinics-Major Urban Areas</u>		Anti-Natal Clinics Outside Urban Areas		Male STI Patients – Major Urban Areas		Female Sex Workers – Major Urban Areas	
	Year	Median	Year	Median	Year	Median	Year	Median
SADC								
Angola	1999	3.4	1999	8.0	1992	2.5	1999	19.4
Botswana	2001	44.9	2001	34.8	2000	53.2	--	--
DRC	1999	4.1	1999	8.5	1997	12.2	1997	29.0
Lesotho	2000	42.2	2000	19.0	2000	65.2	--	--
Malawi	2001	20.1	2001	16.1	1996	54.8	1994	70.0
Mauritius	1999	0.0	--	--	1999	0.4	1998	7.5
Mozambique	2000	14.4	2000	10.6	1999	15.1	--	--
Namibia	2000	29.6	2000	17.3	1998	42.2	--	--
S. Africa	2000	24.3	2000	22.9	2000	64.3	2000	50.3
Swaziland	2000	32.3	2000	34.5	2000	48.9	--	--
Tanzania	2000	17.0	2000	14.0	1997	5.1	2000	3.5
Zambia	2001	30.7	1998	13.0	1991	59.7	1998	68.7
Zimbabwe	2000	31.1	2000	33.2	1995	71.1	1995	86.0
IGAD								
Djibouti	1996	2.9	--	--	1996	22.2	1998	27.5
Eritrea	2000	2.8	2000	2.8	1999	15.0	1989	5.8
Ethiopia	2000	14.9	2000	3.1	1992	37.5	1998	73.7
Kenya	2000	15.3	2000	14.0	1996	14.0	2000	27.0
Somalia	1998	0.0	1999	0.7	1990	0.0	1990	2.4
Sudan	1998	0.5	1998	3.8	--	--	--	--
Uganda	2000	11.3	2000	5.0	1999	23.0	--	--

Source: UNAIDS, Report on the Global HIV/AIDS Epidemic, July 2002

Table III: HIV/AIDS National Estimates, end 1999

Countries & Regions	Estimated Number of People Living with HIV/AIDS					Total AIDS Deaths, '000	Deaths as % of Prevalence
	Adults & Children, '000	Adults (15-49 yrs), '000	Adults Rate %	Adult Women, '000	Children, '000		
Sub-Sahara	24,500	23,400	8.57	12,900	1,000	2,200	8.9
SADC	11,950	11,431	12.76	6,384	431.5	992	8.3
Angola	160	150	2.78	82	7.9	15	9.4
Botswana	290	280	35.80	150	10.0	24	8.3
DRC	1,100	1,100	5.07	600	53.0	95	8.6
Lesotho	240	240	23.57	130	8.2	16	6.7
Malawi	800	760	15.96	420	40.0	70	8.8
Mauritius	0.6	0.5	0.08	...	...	...	...
Mozambique	1,200	1,100	13.22	630	52.0	98	8.2
Namibia	160	150	19.54	85	6.6	18	11.3
S. Africa	4,200	4,100	19.94	2,300	95.0	250	6.0
Swaziland	130	120	25.25	67	3.8	7	5.4
Tanzania	1,300	1,200	8.09	670	59.0	140	10.8
Zambia	870	830	19.95	450	40.0	99	11.4
Zimbabwe	1,500	1,400	25.06	800	56.0	160	10.7
IGAD	5,957	5,894	8.3	3,139	282.5	573	9.6
Djibouti	37	35	11.80	19	1.5	3	8.1
Eritrea	49	49	2.90	...	...	...	...
Ethiopia	3,000	2,900	10.60	1,600	150.0	280	9.3
Kenya	2,100	2,000	13.9	1,100	78.0	180	8.6
Somalia	...	...	...	...	...	...	...
Sudan	140	140	1.00	...	...	...	...
Uganda	820	770	8.30	420	53.0	110	13.4

... indicates not available.

Source: UNAIDS, Data Base, 1999

Table IV: Economic and Social Indicators – Selected Countries

	% w/ access – Essential Drugs	% Children Under 5 Malnourished 1992-98	Under 5 Mortality per 1000 %	Adult Illiteracy as % of over 15s - 1998	Access to Sanitation % of Urban Pop.	GNP Per Capita PPP – 1999 US Dollars	GINI Coefficient	Primary Net Enrolment %	Contraceptive Prevalence as % of women 15-49, 1990-98	HDI (1999)	Urban Pop as % of total pop.	% GDP from Indust.	% Under Nourished – 1996-98
SADC													
Botswana	90	--	105	25	55	6032	--	80.0	na	0.577	49.7	44.0	14
S. Africa	80	9	83	15	46	8318	59.3	100.0	69	0.702	50.1	31.0	--
Zimbabwe	70	16	125	13	66	2470	62.3	93.0	48	0.554	34.6	24.0	37
IGAD													
Ethiopia	66	48	179	64	8	599	40.0	35.0	na	0.321	17.2	11.0	49
Kenya	36	23	124	20	--	975	35.4	65.0	39	0.514	32.1	19.0	43
Uganda	70	26	170	35	--	1136	46.1	na	15	0.435	13.8	19.0	30

Source: The World Bank, World Development Reports, Various Issues, 2001-03; UNDP, Human Development Report – 2001, 2001.

Notes

¹ This paper was presented at a conference organized by the Ethiopian American Foundation (USA) and Institute of Development Research (IDR), Addis Ababa University, July 11-13, 2003, Addis Ababa, Ethiopia. It is based on the author's presentation at Rhodes University, East London (SA) on October 10, 2002. The views and opinions expressed herein are those of the author, and do not necessarily represent those of the organizations with which the author is associated. The author is grateful to constructive comments received from three anonymous referees. Please send your comments to lemma.merid@undp.org.

²The Northeastern African countries are those in the Greater Horn region; namely, Djibouti, Eritrea, Ethiopia, Kenya, Somalia, The Sudan, and Uganda. These are essentially members of the Inter-Governmental Agency for Development (IGAD). Southern Africa refer to members of SADC and includes 14 countries; namely, Angola, Botswana, DRC, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

³For a contrarian and alarming view on the situation in Ethiopia and several other non-IGAD countries refer to the US Government report (US National Intelligence Council, 2002).

⁴Refer to a similar comparative study for Latin America by (Stillwaggon, 2000).

⁵The data excludes Seychelles, a small island country and a member of SADC. Generally, prevalence is very low among the island countries – not more than 1 percent.

⁶The prevalence rate in Djibouti at the end of 1999 was about 11.8 percent. No data were reported for end of 2001. Recent DHS based prevalence estimate for Kenya stands below 10 percent.

⁷Because of several reasons the ANC and STI data should be used with caution. With respect to ANCs, the clinics where surveillance is carried out in each country are not representative. Moreover, cross-country comparisons of prevalence, in aggregate and by location (urban/rural), based on ANC data, should be taken with care due to the difference in the number of clinics covered by the surveillance system in each country and their respective locations. With respect to data relating to STI bear in mind that the data refer to different years.

⁸The data on mortality are estimated using mathematical model that takes into account the major factors that drive the progression from HIV to AIDS and the survival rates post sero-conversion. The list of factors considered is discussed in the UNAIDS Reference Group Report. Ngom and Clark provide mortality rates using the same source of data as this study. However, they use the mid-point of the estimates (Column 5) whereas this study used column 3. Moreover, theirs' is crude mortality using the total population in the denominator; whereas the mortality estimated in this study is the HIV-specific mortality rate (using HIV+ population in the denominator). A study for Uganda (Morgan, 2002) indicates the median time from sero-conversion to death as 9.8 years.

⁹Prevalence estimates based on Site and Sentinel Surveillance at health facilities vary (decline) as more sites, particularly rural sites, are included. For instance, the prevalence estimate for Ethiopia is observed to have declined from 7.3 percent in 2000 to 6.6 percent in 2001. This reduction depended, among other factors, on the reclassification of the town of Estie from rural to urban. It is reported that “The reclassification of Estie is the primary reason that the 2001 estimate of prevalence presented in this report is less than the prevalence reported in 2000”. (Ministry of Health (MOH), 202), p.8. Randomized household surveys accompanied by body fluid test (i.e. saliva or blood) would provide much better estimates as well as the socio-economic characteristics of the respondents. Several countries in SSA, including South Africa (Nelson Mandela Foundation/Human Sciences Research Council, 2002), Zambia, Kenya, and Mali, have conducted such surveys. This has resulted in lower estimates of prevalence as well as changes in the ranking of regions.

¹⁰It should be mentioned that there are countries in SADC (such as Malawi, Zambia, Mozambique to name a few) that are poor or poorer than the IGAD countries in the list. The point however is that as a group SADC is slightly wealthier considering current income and much more so considering its resource base.

¹¹The exception was urban, Mwanza, where prevalence declined with education for men and stayed constant for women (Barongo and Others, 1992); (Grosskurth and Others, 1995) and (Serwadda and Others, 1992). A study by Fontanet, A.L. and Others, based on data for sugar estates in Ethiopia, showed that prevalence and educational level were inversely related. Fontanet, as quoted in (Hargreaves and Glynn, 2002).

¹²Generalization is extremely difficult in the discourse in HIV. Often what is true in one country is not necessarily true in another. Even in a single country, what is true about one region is not true for another. However, the proposition here is likely to be valid. Income and education are very correlated. Other things the same, those with higher income have the wherewithal to purchase commercial sex and get to travel a lot, which is likely to make them more vulnerable. Similarly, the relationship between income (wealth), education, and urbanization is complex. One may ask if these factors are positively related to HIV transmission, why do not the United States, Canada or Western European countries experience much higher levels of prevalence given their higher income, better educational standards, and still better infrastructural situation.

¹³The same UNAIDS report alludes to some signs of lower and decline prevalence in Ethiopia. It states that “...In Addis Ababa, among 15-24-year-old pregnant women, HIV prevalence has dropped almost as sharply – down to about 11% in 2003 after having peaked at approximately 24% in 1995.

¹⁴This poses a grave challenge for pricing and marketing of agricultural output and macroeconomic management. Higher prices provide incentive for increased production, but the income effect aggravates HIV infection. What should be the policy measures that should be put in place to smooth out the effect on income of increased production or higher prices without adversely affecting the incentive effect but at the same time containing the damage in HIV infection?

¹⁵ In an Editorial Review of the journal AIDS (de Vincenzi and Mertens, 1994), after a critical review of the literature, suggest that “lack of distinction between susceptibility and infectivity, inadequate control for confounding variables, potential selection bias and misclassification of exposure, inappropriate choices of a comparison group, and publication bias may led to under- or over-estimation of the association [between male circumcision and HIV transmission]... The results of observational studies concluded to date, therefore, require cautious interpretation, and one has to find the middle ground between faith and evidence.”

¹⁶ Data on life expectancy at birth would have been a good indicator for this phenomenon. Unfortunately, recent data on life expectancy capture the impact on mortality of both traditional causes as well us HIV/AIDS. Thus, such data are precluded intentionally.

¹⁷ Refer to (Kilian & Others, 1999). Due to awareness and sensitisation programs, illiterate people and educated people learn about the epidemic at the same time. But the learning curve of the educated people is steeper.

¹⁸Refer to (UNFAO/UNAIDS, 1999) for case studies of projects that aggravated the HIV problem due to failure of making the projects HIV-complaint from the very start.

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