IMPACT, CHALLENGES AND RESPONSE TO HIV/AIDS IN SUB-SAHARAN AFRICA: A REVIEW NOTE

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I. INTRODUCTION

The human immuno - deficiency virus (HIV) and the acquired immune deficiency syndrome (AIDS) are diseases that thrive on human ignorance, fear, resistance to change, and poverty. Currently, these are diseases without a vaccine for prevention. Among the two existing types of the virus (i.e. HIV-1 and HIV-2), the predominant one (HIV-1) is transmitted largely through sexual contact, blood as well as mother to child transfusion. Indications are that while HIV-2 is less easily transmitted, HIV-1 mutates rather rapidly and has different strains classifiable into subtypes and groups ***[1]***.

From the report of the first clinical evidence in 1981, HIV/AIDS has today become an epidemic of global reach and concern affecting people responsible for the care and support of others and adults in their economically and socially active years ***[2]***. The evidence presented in this review indicates that from the chronic illness and death of workers, through lowered productivity in enterprises to declining gross domestic product (GDP), the epidemic has the potential to 'sink a nation', albeit not all is gloom.

Available estimates indicate that high levels of new HIV infections are persisting and are now matched by high levels of AIDS mortality. At the global level, based on 2002 UNAIDS report, the number of people living with HIV/AIDS (PLWHA) was 40 million (end 2001) with 71 per cent in sub-Saharan Africa (SSA) ***[3]***. Based on improved UNAIDS estimates for 2004, the number grew from 35 million (2001) to 38 million (2003). In the same year, about 3 million were killed by AIDS; over 20 million have died since the first cases of AIDS were identified. Of the 2003 UNAIDS estimates of PLWHA, about 68 per cent were from SSA. When compared to 16 per cent (6.4 million) in South East Asia and about 4 per cent (1.6 million) in Latin America, it is obvious that HIV/AIDS marks a severe development crisis in SSA.

It is noteworthy that these reported AIDS cases represent only the visible part of the epidemic. The true number of cumulative AIDS cases is not known as many more people are infected with HIV but have not yet developed AIDS. Put differently, there is much more to the epidemic than the number of reported cases indicated here because some people never seek hospital care for AIDS; some medical personnel may not want to record a diagnosis of AIDS because of the stigma; some people with HIV infection may die of other diseases before they are ever diagnosed as having AIDS; some rural hospitals may not have the capability to test HIV infection; and most private laboratories do not report their cases.

Nonetheless, the epidemic is worse in the southern sub-region of SSA than anywhere else in the African continent. While the sub-region is home to about 30 per cent of PLWHA worldwide, it has less than 2 per cent of the world's population. By end 2001, whereas the adult HIV prevalence rate in Botswana was about 38 per cent of the adult population (15-49) that for Mozambique was 14 per cent. Within that range, Swaziland had 35 per cent, Lesotho (29%), Zimbabwe (27%), South Africa (25%), Namibia (22%), Zambia (20%) and Malawi (15%) ***[3, 4]***. Most of the population in Botswana lives in a narrow corridor between Francis town and Gaborone; possibly, the good road and rail connection facilitates the spread of HIV in both cities. Besides, as the most urbanized part of SSA, it is reported that the accompanying transition from traditional to modern culture possibly also, gives rise to new patterns of sexual behavior in the southern sub-region. High levels of movement back and forth between town, countryside and mining areas could, as well, help the spread of the virus.

Data from antenatal clinic in selected countries (1997-2002) of the sub-region reveals conflicting trends in the prevalence rates ***[4]***. Among pregnant women, the rates leveled off at about 40 per cent in Gaborone (Botswana) and Mazini (Swaziland), 30 per cent in Guateng province (South Africa), 18 per cent in Maputo (Mozambique), almost 16 per cent in Blantyre (Malawi), and 20 per cent in Lusaka (Zambia). For the young women (15-24) attending antenatal clinics, HIV prevalence in Lilongwe (Malawi) declined from 23 per cent in 1996 to 15 per cent in 2001, and in South Africa, it increased from 22-23 per cent (1998/1999) to 25 per cent (2000/2002). In

Botswana, Lesotho, Namibia and Swaziland, HIV prevalence has reached extremely high levels without signs of leveling off. In 2002, the level in Botswana and Swaziland was almost 39 per cent from about 4 per cent a decade earlier while in Namibia, it rose to over 23 per cent (2002), reached 30 per cent (2003) in Lesotho, and dropped from 34 per cent (end 2001) to 25 per cent (2003) in Zimbabwe*.*

In contrast to the southern sub-region, the situation in eastern and central sub-regions has been quite different ***[3]***. While HIV prevalence continues to decline in Uganda from about 30 per cent in Kampala a decade earlier to about 8 per cent as at 2002, in Kigali (Rwanda) it declined from 35 per cent (1993) to 13 per cent (2003). In the western sub-region, although sustained program efforts have stabilized HIV prevalence levels among pregnant women at around 1 per cent since 1990 through 2002, it has increased among sex workers. In Dakar (Senegal) the prevalence increased among the latter group from 5 per cent (1992) to 23 per cent (2002). In other countries of the Sahel, HIV prevalence levels have remained relatively low: around 2 per cent in Mali and 1 per cent or lower in Gambia, Mauritania, and Niger. Like Burkina Faso, Ghana shows stable trends between 2 per cent and just over 3 per cent since 1994*.*

About the mid-1990s, close to 80 per cent of HIV-1 virus was concentrated in 10 countries of the eastern, central and southern sub-regions of SSA namely Burundi, Central African Republic, Democratic Republic of the Congo, Kenya, Malawi, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe; these constituted what was then generally known as the AIDS BELT ***[2]***. At the time, countries in the western (e.g. Burkina Faso, Cote D'Ivoire, Ghana) and northern (e.g. Sudan) sub-regions of SSA recorded relatively lower levels of both HIV virus types. As at end 2003 there were on average 13 infected women for every 10 infected men in SSA – up from 12 for 10 in 2002. The ratio of young females (15-24) living with HIV/AIDS ranged from 20 women for every 10 men in South Africa to 45 women for every 10 men in Kenya and Mali.

It is this change in the dynamics of HIV/AIDS prevalence in SSA that underlines the objective of this paper - to review the reported impact, the challenges, and the response to the pandemic in SSA countries generally and those in the southern sub-region in particular ***[3,4]***. Admittedly, a significant proportion of people in SSA have not yet acquired the virus. Enabling them to protect themselves against HIV and providing adequate and affordable treatment and care to PLWHA could represent significant achievements to two of the biggest challenges facing Africa today. Implicitly, this review could make some contribution in such direction.

The material for the review draws from published literature. In terms of scope, the demographic and socio-economic determinants of the high prevalence of HIV infection in SSA is outlined in section II, section III examines the demographic, socio-economic impact, and section IV discusses the challenges and responses to the epidemic at various levels. The focus of section V is on key recommendations towards confronting the pandemic.

II. DEMOGRAPHIC AND SOCIO-ECONOMIC DETERMINANTS

The young age at women's first sexual intercourse, young age at first marriage, age differences between spouses, and the presence of sexually transmitted infections (STI) have been identified as the most common behavioral and biological factors accounting for the high HIV prevalence worldwide ***[4]***. For SSA countries generally and those in its southern sub-region in particular, the poorer socio-economic performance relative to other world regions, the unfavorable health environment, the prevailing high fertility level, and the number of traditional practices that elevate the risk of exposure to the HIV virus seem to have coalesced in a deadly combination in a way unparalleled elsewhere.

Poverty

Despite marked improvements in overall health conditions and reduction in mortality since the 1950s, SSA still has the poorest socio-economic and demographic indicators worldwide. ***[5]*** Its

annual population growth rate estimate during the 2000-2005 period of 2.3 percent implies that its population could double every 30 years as against at least 50 years in Latin America and South East Asia. Whereas per capita income quadrupled in East Asia and the Pacific region (1975-99) growing annually at 6 per cent, the corresponding average per capita GDP estimate for SSA was negative (-1%) ***[6]***. Madagascar and Mali have per capita incomes of $799 and $753, down from $1,258 and $898 (respectively) 25 years ago. Many SSA countries have high levels of income inequality. Out of an estimated GDP of $324 billion for SSA, South Africa produced $131.1 billion or about a third. The corresponding average per capita annual income for SSA was estimated at $490 as against $ 3,240 in Botswana; $ 3,170 in South Africa; $ 1,890 in Namibia; and $ 1,350 in Swaziland.

This relative wealth combined with the gross inequality of incomes within these countries, has played a significant role in the development of the HIV/AIDS epidemic. Widespread poverty, high rates of unemployment and generally low returns from informal sector income-generating activities have been associated with high-risk sexual behavior and the spread of HIV. Although the proportion has since increased, the World Bank reported that in 1991, 25 per cent of Zimbabwean population, and about 50 per cent of the Lesotho population and Malawi and 67 per cent of Zambian population in the early 1990s, lived below the national poverty line ***[6]***.

Health indicators

Access to health-care services as well as to safe water is also lowest in SSA ***[7]***. The level of expanded program of immunization for the basic diseases is low. Warm and humid temperatures and poor sanitation, coupled with poor quality and access to curative health services, promote the dominance of infectious and parasitic diseases. By providing a host of pathogens to capitalize on the immune deficient status of HIV patients, the endemicity of infectious and parasitic diseases creates a fertile context for the progression of HIV infection to AIDS. Additionally, the region has the highest level of STI in the world; these infections form ulcers and sores that serve not only as carriers for HIV infection but also as foci of infection for maintaining the high levels of STI themselves ***[8]***. It is also characterized by uniquely high levels of polygyny partly because farming and economic strength depends largely on the size of the work force. Together, these and other forces impact negatively on the HIV/AIDS dynamics.

It is to be recalled that the need to reverse the foregoing indicators of poverty in a bid to making national economies in SSA more efficient, more flexible and better able to use resources, among others, formed the ex-post rationalization for the structural adjustment programs (SAPs) introduced by the World Bank during the 1980s ***[9]***. The majority of SSA countries that have adopted SAPs have not experienced sustained economic performance and social development. Contrary to expectations, the massive devaluation of national currencies, the repayment of debts and the reduction of public expenditure on health and education consequent upon SAPs, have really hit hard at populations in the lower echelons of civil society within SSA.

Cultural influences

There are also a variety of traditional factors that foster HIV transmission ***[10]***. Among these are widow inheritance (i.e. a form of social security for widows without rights of inheritance to the land or property of their husbands); wife sharing (among brothers as in western Uganda) or in the form of polyandry (among some tribes in Kogi and Plateau States in Nigeria); sexual hospitality (whereby a husband offers to a visitor or friend the sexual services of his wife and in some cases, his daughter); ritualistic cleansing (by which a spouse of a deceased person has sex with a family member in order to be cleansed or to be freed of the spirit of the deceased); and, the breaking of a girl's virginity among the Maasai warriors in Tanzania as a prerequisite for breast development. The practice of dry sex and use of drying agents can create lesions or sores that increase vulnerability to infection through exposing genital organs to bruising and laceration that facilitate the transfer of the virus ***[4]***.

The youth factor

Young people are particularly vulnerable to HIV infection because of lack of access to HIV information/prevention services and risky sexual behavior ***[11]***. Stigma is particularly damaging to youngsters as they struggle to consolidate their identity and establish their place in the world. Marginalized young people (including street children, refugees and migrants) are also at risk if excluded from health services or are exposed to unprotected sex or use illicit drugs. In some societies, many young females actually have little control over how, when and where sex takes place. The vulnerability of youngsters is further complicated by the fact that many of them harbor misconceptions about the disease let alone hearing about it. Even when they know, they do not connect knowledge and risk perception with behavior.

III. THE IMPACT

The impact of the HIV/AIDS epidemic has to be understood within the context of the critical social and economic problems being experienced by the countries as just outlined – poverty, food shortage, inadequate health care, the marginalization of women, and policies that allocate insufficient resources to the social sectors ***[9]***. In the hardest hit countries, the epidemic is erasing decades of health, economic and social progress and reducing life expectancy by years, deepening poverty, and contributing to and exacerbating food shortages.

For a start, there are three discernible stages in the scourge of the pandemic. The first comprises seropositive individual returnees from urban centers many of whom arrive at the rural family homes with declining health. In time, these returnees infect the local residents (i.e. second stage). The third stage is marked by its impact on farming systems as farmers begin to die ***[2]***. When a producer dies, the impact is on the remaining work force for the farm in terms of the division of labor, authority structure, physical output and resource exchange. As the largest employer of labor in most of SSA, the loss of a few workers at the crucial periods of planting and harvesting can reduce significantly, the size of the harvest. Where food security has been problematic consequent on drought, any declines in household production can have serious consequences. Besides, a loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops; this could imply switching from export to food crops thereby reducing the production of cash crops. This downward trend that began with the economic recession is presently intertwined with the impact of HIV/AIDS pandemic ***[7].***

Demographic

The observed HIV prevalence for females is markedly higher than for males among those aged 15-24; the reverse is the case for those aged 25-39. The highest infection rates observed are among females aged 20-24 and males aged 30-39 ***[4]***. While there are more than four times as many females than males in the age group 20-29, there are about one third more females than males in the age group 20-29; this pattern reverses with more males than females reported as having AIDS in all age groups 30^{+}.

Child and adult mortality rates and life expectancy

It is estimated that 68 million PLWHA would die between 2000 and 2020 ***[3,4]***; of these, 3 million died in 2001 alone worldwide with 2.2 million (73%) of them in SSA. Based on the estimates of crude death rates due to AIDS, Botswana led SSA with such deaths (16.7%) followed by Zimbabwe (15.6%), Swaziland (12.8%), Lesotho (12.2%), Zambia (11.3%), South Africa (8.2%) and Namibia (7.3%). Together, these 7 leading countries accounted for more than a third (34%) of the total 2.2 million deaths for all SSA as at 2001; only 2 of them (Zambia and Zimbabwe) are among the 10 countries that comprised the aforementioned AIDS BELT during the 1980s.

The epidemic has a particularly strong impact on the mortality of children aged 0-4 years. In seven countries of the southern sub-region, the mortality of children aged under five is estimated

to have increased by 20 – 40 per cent due to HIV/AIDS ***[12]***. The epidemic is also eroding decades of progress made in increasing average life expectancy in SSA. More than 20 SSA countries experienced drops in average life expectancy between 1985-90 and 1995-2000. In 6 southern sub-region countries (Botswana, Burundi, Namibia, Rwanda, Zambia and Zimbabwe), average life expectancy declined by more than 7 years. Indications are that the estimated average life expectancy at birth of 48.4 years (both sexes) for all SSA as at end of 2001 would have been 62 years without AIDS, a loss of 14 years ***[13]***. In this regard, Botswana lost between 30-35 years; Zimbabwe, 25-30 years; Swaziland, 20-25 years; Kenya and South Africa, 15-20 years; Cote D'Ivoire and Mozambique, 10-15 years; Burkina Faso and Cameroon, 5-10 years. It has been established that the epidemic has the potential of doubling infant mortality, tripling child mortality and erasing gains made over 5 decades in child survival ***[3, 4].***

Orphans

As HIV infection continues to spread (i.e. first epidemic), the various SSA countries are reeling from human losses consequent on the epidemic of HIV related illnesses and AIDS (i.e. second epidemic) ***[14]***. Tuberculosis, the most serious of the opportunistic infections to which HIV-infected people are prone, is on the march. Indications are that in some areas, as many as 50 per cent of all HIV-infected people also have tuberculosis. This parallel resurgence of tuberculosis is sometimes described as the third AIDS-related epidemic ***[2]***. Together, all three epidemics constitute a grim tragedy not just because of the accompanying personal suffering but also because the people being lost to AIDS, mostly young and middle-aged, are the ones on whom society depends to take care of the young and the old, to farm the land, to work the mines, to teach in schools, to run hospitals.

In the aftermath of the second epidemic, many children are left orphaned on their parents' death. The distribution pattern of these orphans clearly indicates that 7 countries (out of the 10 that constituted the former AIDS belt) in the eastern sub-region have the highest concentration (58%) followed by those in the western sub-region (20%), central sub-region (13%) and southern sub-region (8%). Out of the 14 million orphans (aged 0-14) who were among the PLWHA worldwide as at end of 2001, almost 80 per cent of them were in SSA. "As the number of adults dying of AIDS rises over the next decade, increasing numbers of orphans will grow up without parental care and love and be deprived of their basic rights to shelter, food, health and education" ***[8,12].***

Forecasts indicate that these numbers will increase drastically in the next 10-20 years. The number of AIDS orphans in the southern sub-region would increase to 2.9 million by 2001 and to almost 10 million by 2015 ***[3, 4]***. Since a child leaves the population of orphans when he/she reaches age 15 or dies, the cumulative number of children orphaned by the epidemic is much higher than can be seen at any one point in time. At the family level, there will be an increased burden and stress for the extended family; at the community and national levels, there will be an increased burden on society in terms of needed services – orphanages, health care, and school fees; there will also be an increase in the number of street children.

The suffering of these orphans is better imagined than described ***[12]***. The deprivation from schooling in particular, is a sequel of either families impoverished by AIDS not being able to afford school fees or the children are needed at home to perform tasks that sick or dying adults are no longer able to handle. Either way, the resulting neglect of their health as well as the educational, nutritional and emotional needs is a real tragedy for SSA let alone the additional pressures on the adopting families thus exacerbating the aforementioned poverty situation. The mere thought about the ever-increasing numbers of these orphans in relation to the development potential of SSA, is sufficient "wake-up-call" for all concerned parties worldwide to consider as a top priority, the search for a cure for AIDS and a vaccine for the prevention of HIV infection.

Socio-economic

Families and households

The impact of HIV/AIDS on households ranges from dissolution through increased poverty to food insecurity. As a mechanism for providing comprehensive care, the African family has been stretched to the limit by the HIV/AIDS scourge since the bulk of care provided for the victims is by the family ***[8]***. The actual provision of care has been almost wholly an undertaking of the women, the linchpins of subsistence farming in most of SSA. Through attending to sick husbands, children, co-wives and orphans of diseased family members, the demands take a toll both emotionally and financially on the women by overloading their work schedule.

Among the coping strategies in affected households are using up savings, selling of assets, and receiving assistance from other households. South Africa reports using up, on average, 21 months of savings to pay for medical expenses and funerals ***[2,4]***; in Tanzania, the corresponding expenditure is 29 per cent. As debts mount, precious assets are sold. Loss of income, additional care-related expenses, the reduced ability of caregivers to work and mounting medical and funeral fees push affected families deeper into poverty. Almost invariably, HIV/AIDS poses a potentially major threat to food security and nutrition mainly by diminishing the availability of food (due to falling production, loss of family labor, land, livestock and other assets). Once households are stripped of productive assets, the odds of them recovering and rebuilding their livelihoods often grow dimmer.

As parents die and children are sent to relatives for care and upbringing, dissolution of the household usually occurs in the face of the family being stripped of income earners and assets. About 65 per cent of households are reported to have dissolved in Zambia at the death of the mother. A major impact on households is the rapid transition from relative wealth to poverty ***[7,8]***; in two thirds of families in Zambia, monthly disposable income fell by at least 80 per cent at the death of the father ***[15]***. In Cote D'Ivoire where health care expenses are reported to have increased by 400 per cent with one PLWHA member, income in similar households has been halved. In Burkina Faso, Rwanda and Uganda, it is projected that the proportion of people impoverished in the aftermath of HIV/AIDS will increase from 45 per cent in 2000 to 51 per cent by 2015. In Botswana, per capita household income is expected to decline by 13 per cent***.***

Equally, the financial burden of death can exceed that of illness. In Tanzania, households have reported spending up to 50 per cent more on funerals than on medical care. Further evidence from Tanzania indicates that households with HIV-related death during the last 12 months experienced an 8 per cent upsurge in medical care and funeral costs as against 0.8 per cent in those without. In Cote D'Ivoire, the medical expenses in households with HIV-patient were double those without. In Uganda, healthcare and funerals absorbed most of the household savings. In Ethiopia, average cost of treatment and funeral was several times the average household income ***[4].***

Firms and businesses

AIDS-related illnesses and deaths to employees affect a firm by increasing expenditures and reducing revenues. Revenues may be reduced due to absenteeism on account of illness, attendance at funerals and time spent on training. Expenditures are increased by health care costs, burial fees, and training/recruitment of employees to replace the ill/dead. Labor turnover can lead to a smaller or even less skilled workforce due to loss of tacit knowledge and declining morale. The replacement of labor and other direct and indirect costs bring in their wake, higher production costs and consequent reduced operating profits for firms ***[16].***

In general the impact of HIV/AIDS on firms and businesses depends on the type of business, the skill level of employees, the types of benefits provided, and the amount of savings held. It weakens economic activity by squeezing productivity, adding costs, diverting productive resources and depleting skills, all of which ultimately shrink market demand for products and

services. It hits productivity mainly through increased absenteeism, organizational disruption and the loss of skills and "organizational memory". Rising absenteeism tends to push up visible costs while forcing down productivity thereby putting profits at risk. In the process, production cycles can be disrupted, equipment stands idle and temporary staff may need to be recruited and trained. High rates of absenteeism, morbidity and mortality trigger increasing disorganization in workforces consequent on rising staff turnover, loss of skills and weakened morale. The impact on informal enterprises is even more devastating as there is a high risk that the entire enterprise could collapse when the lead entrepreneur can no longer work.

The real problems ***[2]*** relate to the potentially explosive issues of job security for employees given employers' policy of discrimination against seropositive job applicants as well as existing staff. The applicants are unable to get employment; the staff is faced with dismissal and financial ruin; and organizations struggle to 'keep afloat' in the face of dwindling profits. Dismissals have ripple effects throughout the system. In a situation where female labor force participation rate in the urban wage sector (of many SSA economies) is low, and most women depend on husbands' employment benefits, the dismissals are doubly unfortunate against the background of existing discriminatory employment policies directed at women and an increasing number of female-headed households.

Sectors

Within **the education sector**, the risk of contracting HIV among the educated may lower the return to education from the household point of view, resulting in low schooling investment- ***[16]***. A decline in school enrollment is the most visible effect of the epidemic. But the risk is not simply that of infecting the teachers but also higher stress in the job as children from households with PLWHA are forced to drop out of school or attend sporadically. There is also the danger that demands on the health and welfare services might divert resources from education to other sectors. The cost associated with training new teachers and hiring substitute teachers will also strain budgets, crowding out investments in infrastructure, materials and human resources all of which are necessary in relation to competing in an increasingly knowledge-based world economy.

Regarding **the health sector,** the epidemic has created a need for robust, flexible health systems at a time when many affected countries in SSA have been reducing public service spending to repay SAP-related debt and conform to international finance institutions' requirements. Already weakened systems are being forced to cope with the extra burden of sickness and the loss of essential staff through sickness and death related to AIDS. Depending on the number of people seeking services, the nature of the demands and the available capacity to deliver health-care services face different levels of strain. HIV-infected persons often experience common bacterial infections and tend to use primary-health care and outpatient services in the early stages**.** Overloading and under-funding of the health system, by reason of the epidemic, raises the stress levels for health care workers. Beyond the increased burden on hospitals and health-care facilities, increased workloads and stress might spur emigration by health professionals. The real scare is that the hospital system in most SSA countries is increasingly losing its workers as a direct result of the pandemic; thus affecting the supply of quality medical care.

In many countries (particularly members of OPEC), **the mining sector** is a major source of foreign exchange. Because most mining is at sites away from home, workers often resort to risky commercial sex; the infection is spread to spouses and communities on returning home. The replacement of highly trained engineers is often difficult. A severe epidemic can thus threaten the mining sector. Because building and maintaining transport infrastructure often involves sending teams of men (e.g. truck drivers, train crews, sailors) away from families for extended periods, the transport sector is also vulnerable to AIDS. In **the transport sector**, most managers are highly trained professionals often difficult to replace in case of death. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.

Macroeconomic

Although the macro-economic impact of AIDS is difficult to access, overall, the impact of HIV/AIDS on the labor force is first felt by individual employees and families (micro level); gradually it spreads through firms, businesses and organizations (intermediate level) and through this build up, it destabilizes the national economy (macro level). Deaths due to AIDS reduce the number of available workers and less experienced workers replace the dead leading to lower productivity. Shortage of workers leads to higher wages leading to higher domestic production costs and a loss of international competitiveness. Reduced savings due to greater health care expenditures and a loss of worker income can cause a significant drop in capital accumulation leading to slower employment creation in the formal sector.

The two main macroeconomic-level impacts of HIV/AIDS are reduction in the labor supply and increased costs. Since costs of treatment and palliative care are high, the level and composition of future consumption demand by both private and public agents and ultimately, the levels of savings and of investment, are affected. Whereas expenditures for medical care, drugs and funeral expenses constitute the direct costs of HIV/AIDS, the indirect costs include lost time due to illness, recruitment and training costs to replace workers and care of orphans. If such costs are financed out of savings, the reduction in investment could lead to a significant reduction in economic growth. Three approaches are currently in use to assess such knowledge namely the human capital or cost-benefit framework, WEFA macro-econometric (time series) model, and computable general equilibrium (CGE) model ***[16]***.

The human capital model postulates that the impact of the epidemic comprises the total annual costs of the disease to society cumulated over a specified period. The direct costs include the costs of health services provided by the public and private sectors to PLWHA at all stages of the disease as well as testing, prevention research and education; the indirect costs include estimates of the morbidity, disability and premature mortality consequent on HIV/AIDS per annum, by summing lost future earnings over all cases. The latter (i.e. the sum) is adjusted to account for replacement of ill and deceased workers by unemployed workers yielding a proxy for lost production in the whole economy. However, this model does not examine how the direct costs of the epidemic are “financed” and does not recognize that a proportion of the indirect costs would have been saved and applied to investment so that the society’s future productive capacity is lower as a result of the epidemic than it would have been otherwise. Nonetheless, the model is better suited for estimating the marginal benefit of preventing a single case of HIV infection than for assessing the aggregate income and growth impact; it also places useful emphasis on accurate estimation of the health care costs, an issue where considerable confusion remains.

In assesing the impact of the epidemic on household demand, WEFA macro econometric model suggests that the drop in such demand due to lower labor incomes is largely offset by rising income per capita within households due to the smaller population. This leads to a smaller decline in demand for durable goods and non-health services than the decline in demand for non-durables for which the appropriate demand is inversely related to income. This contention is at variance with other research findings that households reduce durable consumption to maintain food intake and under certain circumstances, will raise the level of precautionary savings to fund investments on the expectation of AIDS related deaths, to support surviving family members. Put differently, this model suggests that while both domestic savings and investment savings will decline as a result of the HIV/AIDS scourge, investment drop will be more moderate resulting in a larger savings gap to be filled by foreign capital flows. Because the model is highly aggregated, it is ill suited to model expenditure switching programs, which are probably the key to management of health care costs in the face of AIDS.

The CGE models are based on a 'snapshot' picture of an economy contained in a social accounting matrix; rich in sectoral and income distributional data; and are widely used to evaluate trade and fiscal policies affecting taxation and expenditure given their differential impacts on productive sectors and income classes within the economy. Accordingly they are well suited for evaluating the economy-wide impacts of the HIV/AIDS epidemic. Because CGE models are supply-constrained, declining production, incomes and savings (resulting from the HIV/AIDS epidemic) tend to be magnified in their depressive effect on the economy. The reduction in GDP growth in the wake of HIV/AIDS will thus be extremely large; indeed the impact is optimized when skilled workers are most severely affected and expenditure is entirely financed by savings leading to a reduction in the growth rate of just over 1 per cent per annum.

A range of studies deriving from these models tend to agree that the net effect of the epidemic on per capita GDP growth is negative and possibly substantial ***[16]***. For countries with national HIV/AIDS prevalence rates of 20 per cent, indications from the studies are that annual GDP on the average, dropped by 2.6 per cent; the rate of economic growth in SSA fell by 2-4 per cent as a result of the epidemic. It is reported that by 2015, the economies of Botswana and Swaziland would grow by 2.5 and 1.1 per cent respectively less than they would have without the epidemic. For Mozambique, the epidemic would reduce GDP in the long term simultaneously with discouraging foreign and domestic investors. South Africa with about 40 per cent of SSA's economic output faces a real GDP of 17 per cent lower than it would have without AIDS. By thus increasing the risk profile for investment in South Africa, investors currently seek premium rates of return of 15-20 per cent; for the rest of the sub-region, the rate is 25 per cent.

On the one hand, research using a macroeconomic framework model of South Africa reports significant effects of HIV/AIDS on the economy. On the other hand, less macro-economic growth of the disease is reported for Botswana partly due to the fact that the mineral sector is not greatly affected by the epidemic ***[16]***. Nevertheless, there is a significant effect on household poverty and inequality.

IV. CHALLENGES AND RESPONSES

The demographic and socio-economic impacts of the HIV/AIDS pandemic outlined in section III are aspects of the challenges that face individuals, families, organizations and governments in SSA. The trauma of grieving death after death induces a feeling of powerlessness, an inability to act, and seemingly endless demands to existing support systems. The difficulty of replacing lost labor and the concomitant loss of output, skills, experiences and aspirations can discourage investment, force the closure of enterprises and reduce national income. Following are the major challenges.

- As at end 2003, women accounted for nearly 50 per cent of all PLWHA worldwide and for 57 per cent in SSA. As noted in section III, they also bear the brunt of the epidemic's impact. The need is to address the many factors that contribute to their vulnerability and risk – gender and cultural inequalities, violence, ignorance.
- Young people aged 15-24 account for nearly half of all new HIV infections worldwide. They are the largest youth in history and need a protective environment with regular schooling, and access to health and support services if they are to play their vital part in combating the epidemic.
- Although prevention is the mainstay of the response to AIDS, fewer than one in 5 people worldwide have access to HIV prevention services. Although anti-retroviral (ARV) treatment is bringing hope to millions, without sharply reducing the number of new HIV infections, expanded access to treatment becomes unsustainable as providers of ARV treatment will be swamped by demand. In order to prevent the high infection rates among women, the root causes of their vulnerability – their legal, social, and economic disadvantages must be addressed.

- WHO estimates that 90 per cent of people who need HIV treatment urgently are not being reached and that about 5-6 million such people will die in the next 2 years if they do not receive ARV therapy. Only 7 per cent of people needing ARV treatment has access in low income countries; as at end of 2003, only 400,000 had such access worldwide. In SSA, among an estimated 4.3 million people needing AIDS home-based care, only about 12 per cent receive it. In low and middle income countries, only 10 per cent of pregnant women receive services for preventing mother - to child HIV transmission.
- The need is to scale up prevention programs that currently reach only 10 per cent of people at risk of HIV infection; and treatment programs that provide life-prolonging ARV therapy. Such programs must be sustainable to prevent the development of drug - resistant strains of the virus.

These and other challenges together provide the basis for much of what has been done and is being done to combat the HIV/AIDS pandemic. But more needs to be done until some preventive vaccine for the HIV virus is provided and/or a cure for AIDS is found. Since the first vaccine trial enrolled volunteers in 1998, at least 40 different vaccine candidates have been studied in clinical trials worldwide, belying the common misconception that few concepts have been examined. The key elements in comprehensive HIV prevention include AIDS education and awareness; behavior change programs especially for young people and populations at higher risk of HIV exposure; promoting male and female condoms alongside abstinence, fidelity and reducing number of sexual partners; voluntary counseling and testing (VCT); preventing and treating STIs; harm reduction programs for injecting drug users; measures to protect blood supply safety; infection control in health-care settings; community education and changes in laws and policies to counter stigma and discrimination; and vulnerability reduction through social legal and economic change.

The need is to create a social, legal and economic environment in which prevention is possible including access to education, empowerment of women and international cooperation to prevent human trafficking for sexual exploitation; close the prevention gap from a situation in 2004 when less than 1 in 5 people had access to HIV prevention services; ensure that prevention is comprehensive and involves a variety of interventions; eliminate AIDS-related stigma and discrimination through effective legal frameworks; and tailor prevention to the specific needs of people. Following are past and ongoing efforts at the global, regional, national and sub-national levels to confront the challenges posed by the HIV/AIDS pandemic.

Global efforts

A global program on AIDS (GPA) was drawn up by the United Nations World Health Organization (WHO) in 1985-86 and approved by the 40th World Health Assembly in May 1987, the Venice Summit of African Heads of State and Government in June 1987, and the United Nations General Assembly in October 1987. The WHO/GPA coordinated strategy has served as the main policy framework for the global response to the pandemic. Its basic premise comprises prevention of HIV infection and mobilization of national and international efforts ***[17].***

A significant event in the global efforts was the World Summit of Ministers of Health on programs for AIDS prevention held early in 1988. The Summit adopted the London Declaration on AIDS Prevention, which called for the full opening of channels of communication in each society, the forging of a spirit of social coherence through information, education and social leadership and the protection of human dignity in AIDS prevention programs. The Summit declared 1988 a year of communication and cooperation about AIDS; the first World AIDS Day (1st Dec. 1988) was commemorated to promote information and education in the fight against AIDS throughout the world.

The update of the WHO/GPA in 1992 proposed ways of meeting the new priorities including an increased emphasis on adequate and equitable provision of health care, expanded and more effective treatment for other STI, reduction of the spatial vulnerability to HIV infection of women and their offspring through an improvement of women's health, education, legal status and

economic prospects, the creation of a more supportive social environment for AIDS prevention through the removal of legal and other barriers to grant messages about sexual transmission and to people's ability to act on such information, a greater focus on communicating effectively the compelling public health rationale for overcoming stigmatization and discrimination.

Within the United Nations, the personal priority given to AIDS by the Secretary General has helped catalyze growing global engagement by energizing the UN system and engaging political and business leaders in the challenge ***[12, 18]***. The UN Security Council held its first debate on AIDS in January 2000 and since then, two more public debates on the epidemic. At the UN Millennium Summit (September 2000), 43 Heads of State and Government referred to AIDS as one of the most pressing problems worldwide. Additionally, Presidents and Prime Ministers are ensuring personal commitment to the fight against AIDS. In April 2000 at the African Summit on HIV/AIDS, tuberculosis and other related infectious diseases held in Abuja (Nigeria), the UN Secretary General issued a global call to action in the fight against AIDS. AIDS has been on the agenda of Summits and decision-making Forums of the G8 and G77 Nations, the Organization of American States, the Organization of African Unity (now African Union), the European Union, the Association of South Eastern Asian Nations and the Caribbean Community Secretariat. Both the World Economic Forum and the World Social Forum have held key sessions on AIDS and its global implications.

Global movement to scale up access to HIV treatment has made critical gains during the past few years. Individuals and communities whose lives have been touched by the epidemic have led three decades of AIDS activism ***[18].*** Globally, there exist an activist movement that responds to HIV/AIDS on several fronts: community groups providing home-based care, treatment activists working through media and the law courts to expand access to HIV drugs; networks such as the International Council of AIDS Service Organization and its regional bodies; and associations of PLWHA.

This new political momentum culminated in June 2001 when the members of the UN met in a special session of the General Assembly to reaffirm the pledge (made by world leaders in their Millennium Declaration) to halt and begin to reverse the spread of AIDS by 2015. Among other things, the Declaration calls on member states of the United Nations to **[19]**:

- secure more resources to fight HIV/AIDS;
- ensure by 2005 that a wide range of prevention programs are available;
- ensure by 2005, that at least 90 per cent of young people aged 15-24 have access to information, education and services necessary to develop the life skills needed to reduce their vulnerability to HIV and 95 per cent by 2010;
- reduce by 25 per cent the rate of HIV infection among young people aged 15-24, in the most affected countries by 2005 and globally, by 2010;
- by 2005, reduce by 20 per cent and 50 per cent by 2010, the proportion of infants born with HIV;
- by 2003, enact or strengthen anti-discrimination and human rights protections for PLWHA and for vulnerable groups;
- by 2003, develop or strengthen participatory programs to protect the health of those most affected by HIV/AIDS;
- empower women as an essential part of reducing vulnerability to HIV;
- by 2003, develop national strategies to strengthen health-care systems and address factors affecting the provision of HIV related drugs including affordability and pricing; and,
- make treatment and care for PLWHA as fundamental to the AIDS response as is prevention."

It is pertinent to observe as well among these global efforts that although HIV was identified over 20 years ago, scientists, have only in recent years, learned a great deal about the structure of the virus, how infection occurs, and how the immune system tries but fails to defend itself. This dynamic is at the heart of the science of how a vaccine needs to work. In this endeavor, scientists

have been guided by studying people who have become infected and then recovered although in the case of AIDS, there is no one known to have recovered from infection. Although scientists are advancing promising vaccine candidates into development and clinical trials, basic research questions must be resolved.

A drug (***tenofovir***) is being tested in Africa, Asia and the Americas for possible regular use to reduce risk of infection (i.e. pre-exposure prophylaxis or "PREP"). However, legitimate ethical concerns raised by some advocates have resulted in cancellations/delays in some "PREP" trials. The AIDS Vaccine Advocacy Coalition (AVAC) released a report (March 2004), "Will a pill a day prevent HIV" calling for more concerted coordination and advance planning to accelerate evaluation, licensing and access to "PREP". The G8 (June 2004) endorsed the creation of a "Global HIV/AIDS Vaccine Enterprise" to accelerate progress by promoting international public-private collaboration under the auspices of the Bill & Melinda Gates Foundation in collaboration with a number of prominent individuals and organizations. What is needed is to translate these best of intentions into a workable form that energizes the field, adds value, brings new financial and human resources, and accelerates the development and eventual delivery of an AIDS vaccine.

At the AIDS Vaccine Conference held in Lausanne (Switzerland: August 30 – September 1 2004), the International AIDS Vaccine Initiative (IAVI) reported that more than 30 AIDS vaccines are in clinical trial in 19 countries. Expectation is that an effective vaccine is likely to be available after more is known about HIV and the immune system, a conclusion based on interim safety and immune response data from human clinical trials of two AIDS vaccine candidates (DNA.HIVA and MVA.HIVA). The interim data from 205 volunteers in clinical trials from three partners (UK Medical research Council/Kenya AIDS Vaccine Initiative/Uganda Virus Research Institute) show that the two vaccines are generally safe and well tolerated albeit the candidates' ability to elicit an anti-HIV cell-mediated immune response is poor; the promise manifest in preclinical studies of both vaccines has not held up in humans.

Regional efforts

Although most SSA governments did not associate themselves with HIV/AIDS early in the epidemic, the situation changed dramatically during the early 1990s. At the regional level, the African Heads of State and Government adopted the Dakar (1992) and Tunis (1994) Declarations and the Cairo Guidelines for Action (1993) on HIV/AIDS ***[2,17]*****;** these focused on care for HIV/AIDS patients, prevention of infection in youths, protection of women against infection, and, care for orphans. The African Union and the International Donor Community has been involved with the implementation of these Declarations.

Twenty-five of the 50 African governments that submitted national reports to ICPD (1994) acknowledged putting in place, a national level program, task force or committee to deal with the pandemic ***[19]***. The 20-year program of action (ICPD-PoA, 1994- 2014) adopted at ICPD integrated HIV/AIDS pandemic into reproductive health and rights but did not set specific benchmarks. At ICPD+5 (1999), African governments established a new benchmark calling on themselves, with assistance from UNAIDS and donors, to ensure, among others, that by 2005, at least 90 per cent and by 2010, at least 95 per cent of their populations aged 15-24 have access to the information, education, and services necessary to develop the life skills required to reduce their vulnerability to HIV infection.

At the African Summit on HIV/AIDS (Nigeria: Abuja, 2000), tuberculosis and other related infectious diseases, the Heads of State and Government pledged to allocate at least 15 per cent of their national annual budgets to improving the health sector. They also agreed to mobilize the required human, material and financial resources for HIV prevention, provide care and support, and strengthen effective partnerships to achieve these goals. A commssion on HIV and Governance has also been established at the UN Regional Economic Commission for Africa (UNECA) to ensure that advocacy and policy engagement are mounted in parallel with research.

Findings reported from the UNECA survey conducted towards ICPD+10 (2004) also demonstrate increased political commitment by African Heads of State and Government. In particular at the Regional Ministerial Review Conference on Implementation of the Dakar/Ngor Declaration and the ICPD-PoA (ICPD at10), SSA governments reported that they have developed a range of measures and strategies to confront the pandemic ***[19]. Among these,***

- behavioral surveillance has been increasing to supplement epidemiological surveillance in tracking progression of the epidemic and the impact of interventions;
- there is increased HIV/AIDS awareness in diverse communities;
- diverse HIV prevention efforts have been put in place particularly for the youths aged 15-24;
- VCT services are being expanded throughout the region;
- condoms are readily available;
- services for preventing mother-to-child transmission (PMTCT) of HIV are being provided;
- PMTCT services have been made available in pilot sites in urban areas;
- community care and support programmes for orphans and vulnerable children are being developed particularly in southern and eastern sub-regions;
- care and support for PLWHA is increasing with considerable expansion in home care services, primarily through NGOs and faith-based organizations;
- partnerships have intensified, capacity building efforts have expanded; and
- resource mobilization within and from outside the region has grown significantly***.***

At ICPD+10, SSA governments further reported that there has never been such a level of financial support or the strength of political will in countries to provide them; the price of many medicines and diagnostics has fallen dramatically. Donors are increasingly focusing on treatment and care as part of their commitment to scaling up the global HIV response; private sector efforts are growing with increasing numbers of companies establishing HIV treatment programs for their employees; and the '3 by 5' initiative was launched by WHO and UNAIDS in September 2003 to provide ARV to 3 million people in low income countries by end of 2005.

It was however noted that the main constraints have been insufficient human, financial and material resources, political realization of the sectoral and development impacts of AIDS, AIDS-related attrition in all sectors where prevalence is high, and the difficult economic and sometimes political environment in many States. Stigma and discrimination remain widespread, and openness about the epidemic, while increasing, remains limited. Entrenched gender inequality remains a major factor behind the spread of the disease as do socio-economic inequality, high mobility, instability and conflict. The link between HIV/AIDS and poverty is complex, but the existence of widespread poverty and economic inequality directly and indirectly contribute to HIV transmission and impede care and support. Despite the recent strengthening of political leadership and the prioritizing of AIDS on the international and national development agendas, greater commitment is still needed. In order to achieve the ICPD goals on HIV/AIDS, SSA governments would need to deal with these and other related constraints. In particular, they need to:

- develop strategic efforts to reduce the risk environments for HIV transmission, notably poverty, gender inequality, social instability and conflict;
- address the epidemic needs in an integrated way within broader development frameworks and initiatives, and with a strong human rights base needed to address HIV prevention, care and support and impact mitigation;
- increase political commitment and resource mobilization both within countries and from external sources, including critical capacity building;
- scale up access to treatment services throughout the continent;
- intensify efforts to address stigma and discrimination, and increase openness around HIV/AIDS and;
- ensure greater male and female condom promotion and provision, as well as abstinence.

National efforts

National Programs to confront the HIV/AIDS pandemic started during the latter half of the 1980s and involved the development of emergency and medium term plans in the areas of monitoring and research, prevention, and coping with AIDS with the assistance of international organizations ***[20]***. At the time, the need was to ensure a clear political leadership and vision on the part of the national government. Available evidence from Uganda and Senegal demonstrate the relevance of committed leadership in terms of a definite and well-articulated policy aimed at impacting the course of the pandemic. In Uganda, the national HIV/AIDS Control Program was launched in 1987 within the Ministry of Health and the Uganda HIV/AIDS Commission was created in 1990 to control the spread of HIV/AIDS through information, education and communication (IEC) and multi-sectoral strategies.

Similar structures have been established in other countries including the national HIV/AIDS surveillance and inter-sectoral HIV/AIDS health education committees in Zambia; the national HIV/AIDS technical advisory committee and the national HIV/AIDS control program (NACP) in Tanzania; and, a national HIV/AIDS control program and the national HIV/AIDS control commission in Rwanda. These Commissions have established several units (IEC, laboratory, clinical services, epidemiological research, counseling and social) with objectives focused on monitoring, research, prevention and coping strategies.

Based on reported findings from the aforementioned UNECA survey towards ICPD+10, about 42 countries (largely in SSA) have established a unit within the government structure to coordinate HIV/AIDS-related efforts; in 24 such countries, the unit was located in the Office of the President as a mark of the importance attached by the government to confronting the pandemic. Equally, efforts are underway to expand the provision of anti-retroviral (ARV) in many countries (e.g. Botswana, Congo, Kenya, Nigeria, Senegal, Sierra Leone, and South Africa).

However, in South Africa, rather limited results have been obtained from intended key national government interventions such as the “Partnership on AIDS” and the National AIDS Council, possibly because the country is living with a legacy of inequalities, poor health and social development indicators ***[4]***. Indications are that the social and economic impact of HIV/AIDS in South Africa threatens to compromise other economic, social and political goals as well as the known development gains in recent decades. Responses to the investment are hampered, among others, by the structure of the health services, the impact of global economic forces engendered by SAPs and fiscal discipline written into macroeconomic frameworks. There is a perceived lack of formal mechanisms of collaboration and communication.

The wide array of measures and strategies adopted by SSA countries as part of their overall national HIV/AIDS prevention and treatment strategy includes:

- increased behavioral surveillance to supplement epidemiological surveillance in tracking progression of the epidemic and the impact of interventions;
- Improved epidemiological surveillance techniques to increase the standardization and reliability of data;
- Putting in place diverse HIV prevention efforts such as HIV awareness, delayed sexual debut, and condom use particularly for the youths aged 15-24;
- Expansion of VCT services;
- Provision of services for preventing mother-to-child transmission (PMTCT) of HIV
- Community care and support programs for orphans and vulnerable children are being developed particularly in southern and eastern sub-regions;
- Increased care and support for PLWHA is increasing with considerable expansion in home care services primarily through NGOs and faith-based organizations;
- Wide acceptance of reducing stigma and discrimination (despite some resistance) and increasing openness as critical to effective HIV prevention and care;
- Intensification of partnerships, expansion of capacity building efforts, and significant growth in resource mobilization within and from outside the region.

Sub-national efforts

Beyond national structures, various provincial and district organizations and projects have been inaugurated to execute the national activities generally under the Ministry of Health towards fostering inter-sectoral planning ***[2].*** Aside from the public sector, support structures have been established by international and local non-governmental organizations (NGOs), private business and religious agencies. Locally, there are numerous educational institutions, trade unions, community based clubs/associations or civil society and the media. Among these organizations are urban-based non-denominational charitable organizations that provide counseling, information, and training in skills for personnel in HIV/AIDS work and outreach programs. They provide material needs and alleviate suffering, education, advocacy and specific attempts to improve the economic and social situation of specific categories of people. Some have set up home-based care, care for orphans and educational projects; others work to raise HIV/AIDS awareness within the public sector.

Overall, despite significant efforts and achievements at confronting the HIV/AIDS scourge as just outlined, as at end of 2001, diagnostic tests are still not universally available and the majority of PLWHA remain unaware of their HIV status. Even in places where the services are available, fear and associated stigma alongside the abuse of human rights, contribute to the ongoing reluctance among many PLWHA to voluntarily initiate testing and treatment. The vast majority among them, therefore, remain deprived of even basic medications for treating related illnesses and for relieving pain.

V: RECOMMENDATIONS

Based on the discussion under "impact" (section III) and the associated challenges and responses in section IV, several recommendations have been made ***[2, 3, 4, 7,12,14,16,17,18,19,20]*** and are made within the purview of this review towards confronting the scourge of HIV/AIDS. For a start, the Joint Secretariat responsible for the development of the region, comprising the UNECA, AU and the ADB, should put in place (individually and collectively), some mechanism for monitoring the implementation of the various commitments, recommendations and/or suggestions made as at global, regional (ICPD+5 (1999), Abuja Summit on HIV/AIDS (2000), and ICPD+10), national and sub-national levels. The thrust of this review is that the "way forward" is to match action with rhetoric. Specifically, this review urges that:

Fostering prevention and access

- Special efforts need to be made to ensure that the human rights of all individuals (especially PLWHA) are respected. All forms of discrimination should be outlawed given that the stigma associated with the disease limits the diffusion of knowledge about HIV in the general population and increases the risk of transmission to loved ones and others. Given the proven impact of VCT on changing sexual behavior, the use of counseling and voluntary testing centers should be encouraged. Following such testing, ethical codes regarding the confidentiality of AIDS status should be enforced. The protection of human rights of PLWHA would foster a climate of caring and security that is crucial for the success of efforts to prevent further spread of the disease besides promoting openness, tolerance, and involvement of the public in HIV prevention programs.
- All things being equal, the most potent way to avert the devastating impact of HIV/AIDS is to act before the epidemic spins out of control. Towards fostering global access to ARV treatment as a panacea for preventing HIV infection, human capacity in countries whose scarcity of health workers is a barrier to ARV program success need to be strengthened through improving incentives and working conditions to prevent migration to higher income countries. There is need as well, to expand VCT to ensure widespread knowledge of HIV status; provide greater support for technology transfer and exports

from countries with ARV manufacturing capacity to those without; ensure countries can take advantage of their rights to use trade agreement provisions to widen access to HIV medicines and technologies through resisting 'stricter-than-necessary' patient provisions in regional trade agreements that will otherwise undermine much of the flexibility provided in global trade agreements and declarations for low income countries; and place equity at the forefront of policies and programs to ensure fair access to treatment.

- If universal access is to be actualized, the barriers to treatment for women, children, sex workers, injecting drug users, and homosexuals must be eliminated. Stigma and discrimination undermine prevention by making people afraid to find out their infection status besides creating a false sense of security by associating HIV/AIDS with groups of people perceived as 'outsiders'; such people then harbor the illusion that they themselves are not at risk of becoming infected.
- As the epidemic matures in a country, AIDS-related deaths will undoubtedly increase. It is desirable to know the proportion of the population with AIDS. Such knowledge cannot be ascertained from the HIV rates without knowing when the HIV infection was contracted. Knowing the proportion of PLWHA therein becomes important towards monitoring progress and measuring the efficacy of interventions and/or coping strategies. In this connection, the government can work closely with insurance companies to establish guidelines pertaining to policies and benefits for PLWHA towards ensuring that compensation is available to all those who were not infected prior to the issuance of their insurance policy.
- The epidemic kills people and erodes economic productivity. Therefore in settings with large informal sectors, per capita computations can disguise and undermine the human impact of AIDS. Measured economic output only reveals the surface of the total impact of HIV/AIDS on livelihoods, food security, community welfare and the destinies of societies. What is needed is to distinguish the impact of AIDS on weakening economies from such negative factors as declining terms of trade, heavy debt burdens, and effects of SAPS, weak governance systems, political instability and conflict. In considering the use of highly active anti-retroviral therapy, care should be taken as a significant proportion of the population (about 50%) cannot tolerate the side effects of the drugs which, in any case, have to be taken under the strictest conditions.
- To a large extent, the future course of the epidemic depends on efforts to prevent HIV infection among young people. On the premise that young people are themselves a force for change, basic strategies are needed to protect them. Promoting their rights to information, education, health care, freedom from rape and sexual coercion are key among such strategies. Providing HIV/STI prevention, reproductive health services and life skills education and information as well as targeting programming to particularly vulnerable groups (e.g. young injecting drug users) are also relevant.
- A key challenge in the chain of responses purporting to confront the pandemic as outlined in section IV, is ***the lack of coordination in HIV/AIDS related activities from the national to local levels***. This has impeded effective coordination and implementation of programs already disrupted by civil unrest in some countries. Projects are often slowed down by the very nature of HIV/AIDS work; this is heavy and resources are scarce, emotional toll is enormous, and there is a high level of burnout and staff turnover. This situation stresses the urgency of getting to work on an agenda for action that encompasses both prevention and health care.
- Overall, the coping capacity of AIDS affected households should be strengthened by providing direct financial assistance, home visits from health services, food and nutritional support, and waiving school fees. Strategies should be implemented taking into account the disproportionate impact of HIV on women, girls, and orphans including micro-credit and income generation schemes, school support and food assistance programs. In particular, chronically weak health systems should be strengthened. Better protection should be provided for the safety of health workers targeting health staff for ARV treatment, improving salaries and benefits to retain staff or win back those who had migrated to higher income countries. Workplace prevention programs should be supported for employees and management providing healthcare such as access to

voluntary counseling and testing and to ARV treatment in workplace settings, and endorsing policies of non-discrimination against employees living with HIV.

Care and the role of women

- Invariably, the burden of coping with running the family rests on the women; as the men become ill, they often step into their roles. Therefore as the "family caretakers and breadwinners", the women need new safety nets. Micro-credit schemes that take account of women's special needs can be important tools that also make social relations more equitable. The need is for a strong movement to empower women through strengthening spousal relationships. In this connection, the laws governing abortion, marital rape, land tenure, rights of widows, property distribution, sexual harassment, and divorce need to be reviewed. A related need is to create urban employment opportunities for females so that the towns can house as many women as men. In this connection, there is also a need to modify farming practices so that it is not predominantly a female occupation as far as labor input is concerned.
- A central component of a comprehensive HIV/AIDS care strategy is the wholesale integration of prevention and treatment planning and interventions. What is needed is generally known - mass media campaigns, condom promotion, peer education and other interpersonal interventions. Thus what makes epidemiological sense is to alter the risk environment - one that gives the people the power to avoid infection. People who have subordinate status are powerless relative to others. A mother who is financially dependent on a man is the most vulnerable of all.
- How then can women be empowered to avoid infection? Among the mechanisms that have been suggested are supporting women's groups and organizations in their efforts to raise women's status; improving women's legal position relative to inheritance and property ownership; and, maximizing their access to credit and their income generating ability. The women can also be empowered to avoid infection by being given knowledge as well as skills, especially, the skill to say no to unsafe sex; to set their own sexual limits; and to insist that these limits should be respected. Empowering women and youngsters can transform the AIDS risk environment into one that is far more supportive of prevention. This raises a need to understand the protective factors that help adolescents form coping strategies, develop positive self esteem and create a social support system that reduces high risk behavior. What is needed is more and better research into the socio-economic impact of the epidemic.

Research

- Research should focus, among others, on the double impact of the AIDS pandemic on women, as infected persons and providers of care, and on the complex links between women's personal vulnerability to infection and their social status. Since there is no cure for AIDS, there must be a broad definition of care for the PLWHA. Care should focus on the alleviation of pain, discomfort, and treatment of opportunistic infections; this can make for economic efficiency by easing off the congestion in hospitals. Care should entail integrated counseling for behavioral change through day-care clinics, mobile program visits, home-based care (where patients can continue to live among friends and relatives and share their experiences with others with the same plight) and delegation of medical care to lower level health workers like dispensaries and community workers. The need is for innovative studies on how best to invest the scarce medical resources and deliver health care. International coordination of HIV/AIDS research is vital to create a research environment conducive to the sharing of information and experience, which will help speed scientific progress as well as accelerate the development of strategies and technologies appropriate for use in training and the transfer of technology.
- As noted in section III, the greatest economic cost of the pandemic stems from the premature death of skilled labor. There is insufficient knowledge of the relative risks

in various labor categories and sectoral contexts, which make broader demographic and macroeconomic impact analysis difficult thereby constraining appropriate intervention and strategy development. In this connection, the literature does not sufficiently elaborate on how vulnerable the elite in the various countries is to AIDS and how such vulnerability will impact on governance and the economy. In South Africa for example, indications are that the elite is less vulnerable whereas in Botswana, the elite has been dramatically affected. These proportions and relative numbers need to be clearly understood. Research is needed to anchor an effective overall response to HIV/AIDS. Rigorous analysis of basic clinical, epidemiological and socio-behavioral research results must be used to guide the implementation of prevention treatment and care programming.

- Since existing gap between the resources available and those needed is bound to widen as the pandemic evolves, towards narrowing the gap, resources must be identified from within national budgets, while the international donor community responds to meet the remaining needs. This translates into undertaking more testing to bring home the message about the dangers of the epidemic and protect some spouses and other sexual partners from danger. More fundamentally, the ILO/WHO Guidelines on HIV/AIDS in the work place aimed at maximizing the contribution of HIV/AIDS infected persons in the labor force through the avoidance of discrimination against them by employers and fellow workers should be popularized and implemented. However, funds for AIDS must not draw away resources from other activities to the detriment of overall development. Action on AIDS should not further increase debt burdens. International financial institutions should think broadly and creatively about mechanisms to place more funds in the hands of countries currently facing large debt-service payments.
- Towards ensuring reliable national estimate of HIV prevalence in the wider population, substantial additional information is required, specifically information pertaining to the population outside of the antenatal clinic frame of reference. They include the sexually active population other than pregnant women, infants, male homosexuals, and commercial sex. The conditions under which these groups live demonstrate substantial variance which needs to be determined. Since infants may contract HIV without prophylactic treatment, it is important to know about the use of prophylactic treatment as well as the extent of breastfeeding. The dimension of male homosexuality can only be modeled if their number is known alongside some estimate of bisexuality in the population. A refinement would include an aggregation of the degree of risk of the sexual acts in question in terms of type and frequency. With commercial sex, knowledge of their clients in terms of numbers and social background is desirable. Lack of information on these fronts usually leads to use of assumptions; research is needed into the assumptions because often demographers end up modeling their assumptions rather than verifying their adequacy.
- At a macro level, more research is required to achieve greater precision in the modeling of macroeconomic impact of HIV/AIDS. Concerning the aforementioned three macro-level models currently in use for estimating the costs of the epidemic, the importance of sensitivity analysis on the assumptions should be underlined. Considerable work is needed to improve the demographic projections as well as the bridge linking the latter to the economic analysis through using census skill and population categories. Further research is required on household and employer coping behavior; on consumption and investment demand adjustment; effects of dynamic total factor productivity consequent on the epidemic such as the impact on future skills levels through lowered education spending; and the impact of behavioral change in response to policy and organizational interventions to limit the spread of the epidemic.
- Regarding the impact of HIV/AIDS on socio-economic sectors, firms and workplaces, research should develop key HIV/AIDS indicators for monitoring and evaluating the policies and strategies. Critical economic conceptualization of “best practice” approaches and development of techniques to monitor and assess sectoral and

workplace practices should be undertaken. Economic research on health systems that would optimize the public-private and primary-tertiary mix, on ways of strengthening the cost-effectiveness of health interventions and systems as they pertain to HIV/AIDS as well as on social health insurance systems and their implementation within a health system should be undertaken. Emphasis should be on studies to determine the cost-effectiveness and feasibility of different available treatment regimes for different HIV/AIDS-related conditions.

- More research is needed to establish the specific impacts in urban and rural settings. Cities and towns of different sizes and locations must be included for study to determine commonalities and differences. What is needed is a rural database that would be directly comparable with urban data. This translates into a methodologically sophisticated controlled study of chosen rural and urban populations to generate data that are internally and externally comparable. Such a study should also examine and quantify the social costs to households with PLWHA. Specifically, the needed research in this context includes the development of key economically related HIV/AIDS indicators in defining household and community impacts; monitoring and analysis of the indicators; and micro-studies of the relationship between HIV/AIDS and poverty.
- The noted variability of the HIV virus has implications for research and the development of a preventive vaccine. Although it is not known whether the genetic variations in subtypes actually make a difference in terms of the risk of transmission or the response to antiviral therapy, since some HIV subtypes have been observed in the laboratory to have different growth and immunological characteristics, such differences need to be demonstrated in vivo. Equally, given the wide variety of human populations who need protection, inevitably, different types of candidate vaccines will have to be tested against various viral subtypes in multiple vaccine trials. In the long term, a safe, effective and affordable preventive vaccine against HIV is the best hope of controlling the global epidemic.
- Overall, what is needed is to promote and foster an enabling environment that will minimize its impact simultaneously with maximizing its potentials for human development within the context of a life compromising health exigency. Research into programs which will alleviate the social and economic impacts of HIV/AIDS, is an integral part of such an enabling environment; the findings from such research will provide necessary insights towards planning policy and strategic interventions which lie at the core of governance towards the social development of the region.

VI. CONCLUSION

This review notes ***first***, that in any country, stability and progress depend on social cohesion. Citizens need to trust the rule of law, to believe that the state protects their basic interests and to know that their children can look forward to improved standards of living. In SSA, HIV/AIDS epidemic has weakened many of these pillars of social cohesion; alongside conflict and economic stagnation, it has a destructive effect on human security.

Many SSA countries are emerging democracies and restructured state bureaucracies are still in the process of fostering the trust of citizens. By putting further pressures to national budgets thereby weakening state institutions, the epidemic is making it even more difficult for the states to perform one of their primary duties of protecting citizens from human suffering including hunger, disease and a feeling of destitution. A state less able to provide social services for its citizenry may unwittingly be fostering political alienation besides weakening its own political legitimacy. By impacting on both state and community capacity, HIV/AIDS, through hurting the most vulnerable sections of society, can potentially, contribute to social disruption and civil unrest.

However tragic the HIV/AIDS epidemic is for SSA generally and southern Africa in particular, there is still occasion for hope. Because HIV is spread by certain types of human behavior, it can be controlled by changes in those behaviors albeit this does not imply conceitedness. What is

needed is continued involvement from all sectors of society in promoting interventions to reduce high risk sexual behavior, treat and control other sexually transmitted infections, maintain a safe blood supply, ensure safe use of needles, care for those already infected, ensure that human rights are respected and mitigate the problems of those already infected with HIV or otherwise affected by the epidemic.

Early use of comprehensive mix of proven/effective interventions to reach the largest number of people can significantly reduce HIV spread; the most effective interventions are those that focus on population groups with the most sexual partners; prevention through behavior change, condom promotion and STI treatment is more cost effective than providing hospital treatment to AIDS patients and/or using ARV therapy to prevent HIV spread. Although application of interventions on a large scale is costly and measurement of success difficult, indications are that significant reductions in HIV incidence and prevalence can occur at a national level. Region-wide, about 80 per cent of the adult population in SSA remains free of the infection. What is needed is to create an enabling environment where all these people have the opportunity to protect themselves from the disease.

Secondly, the hope for the future is predicated on the fact that successful and proven approaches to the prevention of HIV/AIDS have been identified and the need for particular focus on youths is generally recognized. In every country where spectacular reduction in HIV transmission has been achieved, it has been largely a result of the determination of the youths; community mobilization is the core strategy in such success. Fostering such mobilization requires eliminating stigma, developing partnerships between social and government actors as well as systematically involving infected individuals and communities. Access to comprehensive care and treatment for HIV/AIDS is not an optional luxury in global responses. Access to care is a basic necessity in programming and needs to encompass the full continuum of home-based and palliative care, treatment of opportunistic infections and ARV therapy.

Thirdly, addressing the cultural, economic, political and social factors that render individuals and communities vulnerable to HIV/AIDS is crucial to sustainable and expanded international response. Little wonder then, the development goals of the aforementioned UN Millennium Summit included a commitment to halt and begin to reverse the global spread of AIDS by 2015, halving global poverty, ensuring primary-school education for all, promoting gender equality while empowering women, and reducing child mortality while improving maternal health. This total package is integral to success in alleviating the impact of HIV/AIDS. Assessments of program readiness undertaken by UNAIDS together with rapid responses to calls for proposals from the new Global Fund to Fight AIDS, Tuberculosis, and Malaria, are both demonstrations of immediate and substantial unmet needs in AIDS programming**.**

Finally, the real hope is for a safe, effective and widely available vaccine that can prevent HIV infection in the first place. More international, government and foundation support for vaccine research, a better scientific understanding of how HIV functions, and greater involvement of the large pharmaceutical companies have led to some optimism that the development of an effective vaccine can be accelerated. In this regard, in some SSA countries, the epidemic is provoking new forms of mobilization as social networks and organizations are emerging to confront the pandemic; in turn, this is invigorating civil society. Community-based support networks are mobilizing themselves around the epidemic and social rights groups are advocating treatment access, protection of human rights and improved socio-economic conditions. These initiatives, mounted by community and other popular forces and supported by both public and private sectors, have proved crucial in containing the epidemic. In all these cases, people have chosen to act not on the basis of fear and denial but of compassion and solidarity.

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