

January 7, 2000
1:30 p.m.

TO:

Ambassador Dick Holbrooke - USUN
Gene Sperling - White House
→ Steve Riccetti - White House
Jim Steinberg - NSC
Linda Ricci - OMB Communications
John Hamre/Jim Bodner - OSD
Tim Geithener - Treasury
White House AIDS Policy Office
Ken Bernard - NSC
Gayle Smith - NSC
Joe Papovich - USTR
Susan Rice - DOS/AF
Dave Beier - OVP

FROM: RICK SAUNDERS, OVP/NSA

SUBJECT: Draft of the Vice President's Remarks to the UNSC
On HIV/AIDS in Africa

The Vice President will be making two sets of remarks at the UN Security Council on Monday, January 10. The first will be an overview of emerging security challenges confronting the world community in the new century. The second will address the particular problem of HIV/AIDS in Africa.

Attached is a draft of the second speech. Please review it for substance and relay any comments you may have to the Office of the Vice President by 5:00 p.m. today. Phone comments to Jim Babbitt (456-9513) or send written comments via fax to 456-9500.

The first speech is still being written. It will be coordinated separately.

Attachment:

Draft speech text

DRAFT

As of 1:00 p.m.
January 7, 2000

Vice President Al Gore
U.N. Security Council
Statement on AIDS in Africa
January 10, 2000

Mr. Secretary General, Members of the Security Council, Distinguished Guests, and, in particular, Honored Delegates from the Nations of Africa:

"HIV/AIDS is not someone else's problem. It is my problem. It is your problem. By allowing it to spread, we face the danger that ... our youth will not reach adulthood. Their education will be wasted. The economy will shrink. There will be a large number of sick people whom the healthy will not be able to maintain."

Mr. Secretary and Members of the Council: These are not my words. They were not uttered in the United States or the United Nations. They were spoken by my friend, President Thabo Mbeki of South Africa, as he declared South Africa's Partnership Against AIDS more than a year ago.

Mr. Secretary: those are President Mbeki's words; but they could be mine, yours or any of ours. Indeed they should be. And they should be spoken not only in South Africa, not only in Africa, but all across the earth. In Africa, the scale of the crisis may be greater, the infrastructure weaker, and the people poorer than in countries like my own, but the threat is real for all of us. AIDS cuts across the lines that divide us, and we owe each other the commitment to join together and intensify our battle all around the world – especially where the scourge is greatest.

More than twelve million Africans have already died – one quarter of them children. Twenty million more men, women, and children are now infected. Each day, 11,000 more mothers, fathers, and children become HIV positive – more than half of them under the age of 25.

AIDS has crossed beyond the borders of a humanitarian crisis to become a security crisis for nations of sub-Saharan Africa – because it threatens not just the citizens of those nations, it threatens the very institutions that define and defend those nations.

This disease strikes at the workforce, undercutting the economic strength nations need to fight the crisis. It strikes at parents – undercutting the unifying force of family. It strikes at teachers, undercutting efforts to educate the younger generation and help them lift themselves out of poverty. It strikes at the military, undercutting the means of maintaining order and keeping peace.

The United States is profoundly concerned by the threat AIDS poses to Africa. Of course, I must painfully admit that we have not progressed as much as we would like fighting our own battle against AIDS in the United States. Our most recent Surgeon General's report tells us we have not overcome the ignorance and indifference that lead to

the spread of AIDS. So we continue to study the success of others to add to our experience, just as we seek to share our own knowledge with others.

As Vice President, I have traveled four times to sub-Saharan Africa. I have taken with me top U.S. Health officials, AIDS specialists, corporate leaders, physicians -- to help share America's best ideas on fighting this disease. We have met with African leaders and heard their ideas, their concerns, and their difficulties in facing the raging crisis of AIDS.

I have found it inspiring to see so many leaders, health care workers, mothers and fathers bringing fresh energy and attention to this fight. The scale of the crisis is great, but so is Africa's determination. All across the continent there are people in high places and low taking the initiative to fight for the lives of people they love. Ten years ago, Uganda suffered what was believed to be the world's highest infection rates. Today -- because the whole society has mobilized to end the stigma, urge prevention, and change behavior -- they are now recording dramatic drops in infection rates. Here is the proof. Working together, we can save millions of lives and turn back the tide of this disease.

We know that the most powerful line of defense against this disease is prevention. That is why the United States commits a substantial share of our AIDS funding to education and prevention efforts worldwide -- to help break down the barriers against discussing this disease. And that is why this Security Council meeting is so important; because today we are putting the AIDS crisis at the very top of the world's agenda. Addressing the disease here, before the eyes and ears of the world, sends an unmistakable message that we must end the stigma of AIDS. We must discuss AIDS not in whispers, in private meetings, in tones of secrecy and shame, but right here in one of the great forums of the world, loudly and boldly, with a sense of urgency and concern and compassion. Until we end the stigma, our efforts to end the disease are doomed at the start.

We also need to do more to provide effective treatment when prevention is no longer an option. This means not only medicine; it means better health care delivery systems to monitor and manage treatment. The United States is especially committed to breaking the cycle of infection at one critical point -- perhaps its most heartbreaking point -- at the moment of mother and child transmission.

Our ultimate hope is to prevent this disease by vaccination, and we continue to invest billions in research. But we need to do more to harness the power of the private sector. Last September, in his speech to the UN General Assembly, President Clinton noted that only two percent of all biomedical research is devoted to the major killers in the developing world. He committed America to an effort to accelerate the development and delivery of vaccines for malaria, TB, AIDS and other diseases disproportionately affecting the developing world. I will have more to say about that in a moment.

We believe this three-part strategy of prevention, treatment, and search for a vaccine is the right approach to take against this disease, and we have contributed more

than a billion dollars to fund these initiatives worldwide – more than half earmarked for sub-Saharan Africa. But the crisis is growing, and so must our commitment.

Last year, I was privileged to announce a broad new initiative to increase the U.S. commitment to international AIDS programs by \$100 million. This largest-ever increase in U.S. resources doubled our commitment to fight AIDS in Africa. Today, I am honored to announce an American effort to take the fight further. The budget we will send to Congress next month will include an additional increase of \$100 million for an annual total of \$325 million to fund our worldwide fight against AIDS.

This new funding will:

- finance programs to reduce the stigma and prevent the spread of AIDS;
- reduce mother and child transmission;
- support home and community based care for people with AIDS;
- provide community-based care for children orphaned by AIDS;
- and strengthen prevention and treatment infrastructure

[At the same time, I would also like to announce that the budget we will send to Congress next month will also include \$50 million as a U.S. contribution to the Purchase Fund of the Global Alliance for Vaccines and Immunizations. This contribution – a fulfillment of President Clinton’s promise last September – will help fund research, production, and distribution of vaccines for the whole range of diseases that especially afflict developing nations.]

I would also like to announce today an initiative to promote an expanded public private partnership in the battle against AIDS. In the next few months, I will convene a meeting of US business leaders active in Africa to develop a set of voluntary principles for corporate conduct in the age of AIDS. This effort has the potential to establish the workplace as a venue for promoting the education and prevention of AIDS. Clearly the corporate sector has an economic interest in fighting the spread of AIDS in their own workforces and in the markets for their goods and services. I look forward to working with them to forge the public-private partnership so vital for fighting this disease.

I would also like to add that in America’s effort to address the AIDS crisis, we found it was essential to confront it in the rank and file of our Armed Forces. Secretary of Defense Cohen and General Shelton are eager to share our experience and join in the fight against AIDS in America’s military contacts with our African counterparts.

We are also working to help poor countries gain access to affordable medicines, including those for HIV/AIDS treatment. Last month, the President announced a new approach that will ensure that we take public health crises into account when applying U.S. trade policy. [placeholder for USTR language].

These initiatives are part of America’s ongoing effort to intensify our global battle against AIDS, but no nation can win this war on its own. Last June, in Cologne, we

joined our G-7 partners in endorsing the Cologne Debt Initiative, a landmark decision dedicating faster and deeper debt relief for heavily indebted poor countries, with the savings to be tied to poverty reduction – specifically including the battle against AIDS.

Any serious effort to fight AIDS must also help fight the poverty that speeds the spread of AIDS. The United States will continue to work with our G-7 partners to make sure greater attention and resources are brought to bear in this fight. I challenge all those nations who enjoy wealth and health in the world to match America's increasing commitment to those nations in greater need of both – particularly those nations struggling under a staggering AIDS burden.

As we work to increase the funds available to fight AIDS, we also have to work to increase the impact of those funds. In July of this year, the global community will gather in Durban, South Africa to participate in the XIII International AIDS Conference. We know hundreds of examples of inspiring efforts to fight AIDS all around the world. But right now, they amount to isolated efforts, not a focused assault. We need every separate initiative by local, national, regional, and global organizations, to be knitted together in a way that takes maximum advantage of their synergy and success. The mission of the Durban Conference is every bit as vital as increasing funding, because it will decide how many lives we can save with our funding. [Before the conference, the United States will conduct a senior internal review of our own worldwide response to AIDS, and engage in discussions with Africa's leaders, to ensure that our approach makes the greatest possible impact in advancing our common efforts to overcome the scourge of AIDS.]

The AIDS crisis is one of the most devastating challenges ever to confront the world community. Archbishop Desmond Tutu -- who joined us in Washington last summer as we announced our AIDS funding increase -- has called this a holy war. For all our friends here and around the world willing to wage and to win this war -- let us take heart from the words of South African poet, Mongane Wally Serote:

*"remember
the passion of our hearts
the blinding ache and pain
when we heard the hysterical sobs
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*we heard these, we knew them, we absorbed them
but we surged forward
knowing that life is a promise, and that that promise is us"*

That promise is us. We here in this room -- representing billions around the world -- we are the promise of hope and of change. We have the knowledge, the compassion, the means, and the moral duty to make a difference.

We must make the promise and keep the promise to wage a wider war against this disease -- so that when the story of the AIDS crisis is told to future generations, the moral

DRAFT

of that story will be the power of the human spirit to unite behind a common cause, defeat a common foe, and advance the health, the happiness, and the harmony of all humankind.

May God bless all the families who have suffered from this disease. May God bless our united efforts to end it forever.

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01:21P Wytkind
Page 01

TO: Lorrie McHugh 301 320 1224
Dan Mendelson 301 654 1442
Ken Bernard 6-9390
Sandy Thurmond 6-2439
Tyler Beardsley (e-mailed)
Tom Rosshirt (e-mailed)
Sarah Bianchi (e-mailed)
Doug Elmendorf (e-mailed)
Todd Summers (e-mailed)
Laura Efros (e-mailed)

FROM: Deborah

RE: AIDS / Vaccine announcement for Monday

Hello -

Here is the new draft, for everyone's review. There were a lot of comments coming in, and I think that I got everyone's taken care of, but you should double check my work before this goes final.

Also, three things:

OMB has verified the total funding amount for HIV and AIDS prevention overseas to be \$325. This is a 44 percent increase over last year's funding level and doubling last year's allocation.

I got a comment back that this initiative is limited to Africa, but OMB says that is not correct -- that it should be Africa, Asia, and other regions.

I got a comment back from NSC wanting to strike the portion of the press release that has to do with the impact of HIV on the military. Folks here find that a compelling point to make -- so I tried to make it much more general, but still left it in. If there is a national security problem with the current language, please let me know and we will work something out. Also, there was a request to strike the substance of the description of the military intervention -- but that was from old public paper, so I am not sure what the issue was there, and I also left it in.

Comments back ASAP, please. Thanks again for everyone's help.

Deborah-

Looks like you took all of our edits, thanks. My only question is attached re GAVI.

Thanks,
Lorrie

Increasing primary prevention efforts. To reduce the incidence of new HIV infections, this initiative will help to: implement mass education efforts and community based counseling and testing services, provide AZT short-course therapy to infected individuals to prevent further transmission, implement treatment protocols to reduce mother to child transmissions, and implement blood supply screening procedures.

Providing care and treatment for individuals infected with HIV. Currently, treatment options for HIV infected people in sub-Saharan Africa and India are limited; less than 5 percent of people know their HIV status, and health care providers are often without the tools necessary to diagnose and treat HIV and the associated opportunistic infections. This initiative will provide medical and social services to individuals with HIV, including treatment of sexually transmitted diseases, opportunistic infections associated with HIV, and tuberculosis.

Caring for children orphaned by AIDS. Together with host government and social service agencies, this initiative will invest \$10 million to provide school fees, food assistance, counseling, basic health care, and other services that orphaned children need through community mobilization programs.

Strengthening the public health infrastructure. This initiative will assist African and Asian institutions in effectively tracking the spread of HIV infections throughout the Sub-Saharan and Asian regions, in order to focus HIV and AIDS prevention and treatment resources and provide training and technical assistance to developing clinics and community based organizations delivering prevention and care.

Preventing the spread of HIV within military organizations. The DoD will invest \$10 million to prevent the spread of HIV within military agencies throughout Africa, including: an assessment of HIV prevalence, the development of a prevention plan tailored to the needs of military personnel, and a strengthening of the existing infrastructure to ensure that HIV education efforts become a standard part of military culture.

Initiating HIV prevention programs in the workplace. This initiative will invest \$10 million to initiate workplace programs designed to reduce discrimination against employees infected with HIV and AIDS. Funds will also be used to develop partnerships with the business and labor communities to launch HIV prevention activities for employees, their families and communities.

- Invest \$50 million in purchasing vaccines for developing countries. As part of a broad Administration vaccine initiative, the budget includes a new \$50 million investment in the Global Fund for Children's Vaccines. The fund, administered by the Global Alliance for Vaccines and Immunizations (GAVI), a new, collaborative effort of UNICEF, the World Health Organization, the U.S. Agency for International Development, and other public and private organizations around the world, will purchase vaccines and safe injection equipment for hepatitis B, Hib, yellow fever, and, when available, pneumonia.

Initial contributions to this fund will be used to purchase existing vaccines for hepatitis B, haemophilus influenzae B, and yellow fever, along with related safe delivery equipment such as auto-destruct syringes. Vaccine purchases will be administered through UNICEF, which runs an efficient immunization program today.

Is it
just
purchasing?
Is it
research
&
development
too?

DRAFT: CLINTON-GORE ADMINISTRATION UNVEILS NEW \$150 MILLION INITIATIVE TO COMBAT THE SPREAD OF AIDS AND OTHER INFECTIOUS DISEASES OVERSEAS

January XX, 2000

Today, in a speech before the United Nations, Vice President Gore will announce that the President's FY 2001 budget will include a new \$150 million investment, a XX percent increase over last year's funding level, to combat the international AIDS pandemic and prevent the spread of infectious disease overseas. This new initiative will invest an additional \$100 million, doubling last year's investment, in efforts in activities to prevent and treat HIV and AIDS in Africa and Asia, including: launching prevention programs through community based organizations; educating international military personnel about HIV prevention; initiating activities to prevent perinatal transmission; caring for children orphaned by AIDS; and treating opportunistic infections associated with the disease. In addition, this initiative will make a long term investment of \$50 million to purchase vaccines critical to preventing infectious diseases such for hepatitis B, influenza, yellow fever, and other diseases. This investment will also make an important contribution to the infrastructure development necessary for the eventual purchase and distribution of an AIDS vaccine.

THE AIDS PANDEMIC THREATENS THE ECONOMIC AND SOCIAL STABILITY OF SUB SAHARAN AFRICA AND ASIA. The United Nations calls the AIDS pandemic in sub-Saharan Africa "the worst infectious disease catastrophe since the bubonic plague". An estimated 5.3 million people were infected with HIV by the end of 1996, suggesting that Asia may have surpassed Africa in terms of the highest number of new infections per year.

- **Sub-Saharan Africa and Asia disproportionately bear the impact of the AIDS epidemic.**

While sub-Saharan Africa accounts for only one-tenth of the global population, over 70 percent of individuals infected with AIDS live there. Currently, 21 million people in sub-Saharan Africa are infected with HIV, and every day, an additional 11,000 become infected. In Asia, HIV and AIDS is already widespread. Because this region has 60 percent of the world's population and has the steepest infection curve, experts are predicting that Asia will soon become the epicenter of the epidemic.

- ~~Millions of children in sub-Saharan Africa have been orphaned by AIDS.~~ In the nine largest sub-Saharan countries, between 20 percent and 33 percent of all children have already been orphaned by AIDS. During the next decade, more than 38 million children in the region will be orphaned by AIDS, making it difficult – if not impossible – for these children to access adequate food, clothing, education, health care services, and housing.

- **The AIDS epidemic is jeopardizing the economic stability of the sub-Saharan African and Asian regions.** Recent studies indicate that the AIDS pandemic is affecting the economies of countries such as Kenya, Namibia, and India. For example, recent studies estimate that the loss of skilled personnel to AIDS cost Namibia almost eight percent of their gross national product, and that Kenya's gross national product will be 14.5 percent lower in 2005 than it would have been without the advent of the AIDS epidemic.

- **The AIDS pandemic presents a security issue in the sub-Saharan African and Asian regions.** High levels of HIV infection among senior members of the armed forces in these regions leads to rapid turnover in positions of authority, adversely affecting countries in political transition and weakening the political structure in countries where the military plays a central role in government. In addition, studies have linked the growing number of children orphaned by AIDS to future increases in crime and civil unrest as these children raise themselves alone, often turning to crime, drugs, prostitution, and gangs to survive.

MILLIONS OF PEOPLE DIE EACH YEAR BECAUSE OF PREVENTABLE INFECTIOUS DISEASES. Vaccines have brought about the eradication of smallpox, controlled the transmission of polio to historic levels, and drastically reduced measles rates. An essential part of this success, considered by many experts to be the greatest public health achievement of the century, is the availability of traditional vaccines at low prices and the willingness of industrial countries to provide vaccines and support the immunization delivery infrastructure in developing countries. Despite this success, more work needs to be done.

- **Over four million people die each year due to preventable infectious diseases.** Although three million lives are already being saved each year due to the dramatic growth in vaccine coverage, the wider use of vaccines against hepatitis B, influenza, yellow fever, and other diseases could prevent over four million deaths each year.
- **Vaccines are becoming more expensive, and fewer companies are producing them.** Because new vaccines are the product of years of research development, they cost dollars, rather than cents, per dose. In addition, there are now under 10 major vaccine-producing companies operating internationally, which determine which products reach the market first and often slow the development and distribution of vaccines.

VICE PRESIDENT GORE UNVEILS NEW, \$150 MILLION INITIATIVE TO COMBAT AIDS AND OTHER INFECTIOUS DISEASES OVERSEAS. Today, in a speech before the United Nations, Vice President Gore will announce that the President's FY 2001 budget will include a new, multi-million investment in combating the spread of HIV and AIDS and other infectious in Africa, Asia and other developing countries. This initiative will:

- **Invest an additional \$100 million in HIV and AIDS prevention and treatment efforts overseas.** The President's budget will invest a total of \$200 million, doubling last year's funding level, to increase international HIV and AIDS prevention and treatment efforts. Funds will be targeted to the countries where the disease is most widespread and where the potential for impact is greatest. Activities include:

Increasing primary prevention efforts. This initiative will invest over \$X million for activities designed to reduce the incidence of new HIV infections, including: implementing mass education efforts and community based counseling and testing services; providing AZT short-course therapy to infected individuals to prevent further transmission; implementing treatment protocols to reduce mother to child transmissions; and implementing blood supply screening procedures.

100%
Africa
& Asia

Preventing the spread of HIV within military organizations. The DoD will invest \$10 million to prevent the spread of HIV within military agencies throughout Africa, including: a general assessment of HIV prevalence and risk behaviors; the development of a prevention plan tailored to the needs of military personnel; and strengthening the existing infrastructure to ensure that HIV prevention education efforts become a standard part of military culture.

Strengthening the public health infrastructure. This initiative will invest over \$X million to effectively track the spread of HIV infections throughout the Sub-Saharan and Asian regions, focus HIV and AIDS prevention and treatment program resources appropriately.

Providing care and treatment for individuals infected with HIV. Currently, treatment for HIV infected people in sub-Saharan Africa and India is minimal; less than 5 percent of people know their HIV status, and health care providers are often unable to diagnose and treat HIV and the associated opportunistic infections. This initiative will invest over \$X million to provide medical and social services to individuals with HIV, including treatment of sexually transmitted diseases, opportunistic infections associated with HIV, and tuberculosis.

Caring for children orphaned by AIDS. This initiative will invest \$10 million to provide emergency nutritional support for children orphaned by AIDS.

Initiating HIV prevention programs in the workplace. This initiative will invest \$10 million to initiate workplace prevention programs in ten countries designed to reduce discrimination against employees infected with HIV and AIDS. Funds will also be used to develop partnerships with the business and labor communities to launch HIV prevention activities for employees, their families and communities.

- **Invest \$50 million for vaccine distribution and enhance the develop of an international infrastructure for vaccine purchase and distribution in developing countries.** The budget includes a new \$50 million investment in the Global Alliance for Vaccines and Immunizations (GAVI) to purchase vaccines and safe injection equipment for hepatitis B, influenza, and yellow fever. This investment makes a significant contribution to the infrastructure development necessary for the eventual purchase and distribution of an AIDS vaccine. This new investment will be used to further GAVI's goals of: reaching all children at risk; providing all appropriate existing vaccines and new vaccines as they become available; and allowing for the development and use of needed vaccines even if significant industrial country markets do not exist.

WHITE HOUSE ANNOUNCES NEW, \$175 MILLION INVESTMENT FOR DOMESTIC HIV TREATMENT AND PREVENTION. This initiative would invest an additional \$50 million in domestic community based interventions to: help 150,000 individuals who are not aware of their infection learn their status and access prevention counseling and treatment services; expand community prevention planning, with a special emphasis on racial and ethnic minorities, women, injection drug users and their partners, and young gay men; and building a data infrastructure to assist local public health officials in targeting their prevention efforts. In addition, it would invest \$125 million in the Ryan White program, would shorten the waiting time needed to access the comprehensive range of drugs needed to effectively treat this disease.

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HIV/AIDS IN ASIA: Without Further Action, A Looming Public Health Crisis

With 60 percent of the world's population, Asia will come to dominate the HIV picture in terms of total numbers infected

The HIV/AIDS pandemic's focus is shifting from Africa to Asia, the world's most populous continent. According to UNAIDS data, an estimated 5.3 million people were infected with HIV/AIDS in Asia as of the end of 1996. Current trends suggest that Asia may have surpassed Africa, in terms of the highest number of new infections per year.

In most Asian countries for which there is information, the HIV/AIDS epidemic has reached a concentrated stage either nationwide or at least in some states or provinces, meaning that HIV has risen to high levels among those practicing the riskiest behaviors and is set to spread more widely in the rest of the population, according to a World Bank report, *Confronting AIDS: Public Priorities in a Global Epidemic*.

This includes regions of the world's two most populous countries, China and India, most of Indochina, and Malaysia. Despite some bright spots on the map in terms of effective government and non-government action, without further interventions targeted at the populations at risk—such as sex workers, homosexuals, and injecting drug users—the epidemic in these countries hold the potential to dwarf the health crisis through which Sub-Saharan Africa has suffered for the past decade.

In the remaining Asian countries, the epidemic is nascent, meaning HIV prevalence is very low; infection among those presumed to practice high-risk behavior is less than 5 percent. In these countries, investing in effective prevention now can keep infection rates very low and at relatively low cost.

East Asia

Patterns of infection in east, south, and southeast Asia have been greatly influenced by the proximity of many countries to the "Golden Triangle" of heroin production located at the border between Lao PDR, Myanmar, and Thailand, and to its distribution routes. HIV infection was first detected among those who inject drugs in Bangkok in 1987; during the next year it spread rapidly among injecting drug users in the Thai capital. The pattern was quickly repeated among injecting drug users in northern Thailand and along the border areas between southern Thailand and northern Malaysia. In 1989, HIV infection was identified in Myanmar, Yunnan Province in China, and in Manipur State in northeastern India. HIV was detected among injecting drug users in Singapore in 1990.

Injecting drug use has been the main mode of transmission in China, where the most highly infected province, Yunnan, is adjacent to international drug routes. Male injecting drug users in Yunnan account for 78 percent of HIV infections in China. In other Chinese provinces, infection rates are thought to be low, even among those who practice high-risk behavior.

Economic reforms that have helped to reduce the number of people in poverty in

China by more than half since the late 1970s have also resulted in large increases in internal migration that could generate conditions conducive to the spread of HIV. Studies have estimated that nearly 100 million people, roughly one in twelve people in China, have moved either temporarily or permanently from their registered residence. Much of the movement involves migration within provinces, but an estimated 20 million migrants have moved from poor areas of western China to eastern provinces. Most migrants are young, single, and male, but many women have also migrated; some have reportedly become involved in prostitution. STDs, which were all but eliminated in China in the 1960s, are rising rapidly. Early preventive interventions for migrants and sex workers in areas receiving migrants could reduce the likelihood of an epidemic of HIV and other STDs among these mobile groups.

In most of southeast Asia, with the significant exceptions of Indonesia, Lao PDR, the Philippines, and Papua New Guinea, the HIV epidemic is at the concentrated stage. Injecting drug use has played a central role in the launching of HIV, often in conjunction with commercial sex, but heterosexual transmission is now the predominant mode of transmission. HIV is firmly established among injecting drug users and sex workers in Cambodia, Myanmar, and Thailand, and one to three percent of pregnant women are HIV-positive in those countries.

- In *Thailand*, HIV prevalence peaked at four percent among military conscripts in 1993, but has recently been declining following a national campaign to reduce sexual transmission of HIV through greater condom use and a reduction in commercial sex.
- In *Cambodia* infection levels in the military have reached nearly 7 percent.
- In *Malaysia* and *Vietnam*, more than three-quarters of HIV infections are attributed to transmission through injecting drug use. Yet sexual transmission in Malaysia is clearly on the rise; nearly 40 percent of HIV/AIDS cases seen at the University of Malaya Medical Center since 1986 were thought to be due to heterosexual transmission.
- In contrast, although HIV has been detected sporadically for some time among sex workers in the *Philippines* and *Indonesia*, it has not spread rapidly, even within that group; as of mid-1996 these two populous countries remained at the nascent stage.

South Asia

For more information on the World Bank's work in South Asia, see HIV/AIDS: A Human and Development Challenge South Asia

Among the nations of South Asia, the epidemic is believed to be spreading most rapidly in India and Pakistan.

- In *India*, HIV is widespread among injecting drug users in the northeastern states of Manipur and Mizoram and is spreading to their sexual partners; prevalence in antenatal clinics in Manipur has reached 2 percent. HIV is well established among sex workers and STD patients in much of southern India, including populous Maharashtra and Tamil Nadu states. In the city of Mumbai, HIV prevalence among pregnant women has reached one to two percent.
- In *Pakistan*, the infection rate among injecting drug users in Lahore was 12 percent; as of 1995, HIV infection among women attending antenatal clinics was still extremely low. Transmission by those who inject drugs also

may be a factor near a second major heroin-producing area, the "Golden Crescent," where Pakistan's Northwest Frontier meets the Badakhshan area of Afghanistan and the Baluchistan area of Iran. However, there are no recent data on HIV prevalence among drug users or other groups in these areas.

- In *Nepal*, prevalence so far remains very low among injecting drug users in Kathmandu, partly because of targeted interventions with these groups.
- *Bangladesh's* HIV epidemic is still nascent, but without behavior change, HIV could spread quickly among a population of brothel-based sex workers and their clients.

The World Bank is supporting six HIV/AIDS projects in Asia and expects this number to increase. It is a co-sponsor of the new UNAIDS, which at the beginning of next year will replace the World Health Organization's Global Programme on AIDS with an expanded, multi-sectoral, response to the epidemic.

Country	Adult Prevalence of HIV/AIDS in Asia per 100 adults (1994)
Bangladesh	0.03
Bhutan	0.01
Cambodia	1.9
China	0.0
Fiji	0.04
India	0.4
Indonesia	0.05
Korea, Dem. Rep.	0.0
Korea, Rep	0.01
Lao PDR	0.03
Malaysia	0.3
Maldives	0.6
Mongolia	0.01
Myanmar	1.5
Nepal	0.04
Pakistan	0.06
Papua New Guinea	0.2
Philippines	0.05
Sri Lanka	0.05
Thailand	2.1
Vietnam	0.07





United Nations Development Programme



Sustainable Human Development

HIV and Development Programme

Issues Paper # 2

The Economic Impact of the HIV Epidemic

by Desmond Cohen

TABLE OF CONTENTS

EXECUTIVE SUMMARY

INTRODUCTION

HIV AND THE MACRO ECONOMY

AVOIDING THE COSTS OF AIDS: WHY PREVENTION IS CRUCIAL

MEASURING ECONOMIC COSTS

CONCLUSIONS

TABLE 1: AIDS Coping and Caring Strategies in Rural Uganda

BIBLIOGRAPHY

BIOGRAPHICAL NOTE

EXECUTIVE SUMMARY

This paper has three main objectives.

1. To identify and analyze the primary channels through which human immunodeficiency virus (HIV) reveals its impact on economic and social systems. A model is developed to show that the main effects will be on the level of Net Savings, with consequences for the rate of investment, the rate of economic growth and the level of Gross National Product (GNP) per capita; and on the size of the Effective Labour Supply, which has critical implications for what can be produced, and under what conditions of production.
2. To establish the economic case for effective policies for HIV prevention, and to place this analysis within the framework of the social-economic impact of the epidemic.
3. To review a selection of methodologies and empirical evidence on the impact of HIV on households, productive sectors and government. The economic and social impacts of HIV are shown to be pervasive, with all sectors of economic activity and all segments of society affected by the epidemic. The case is made for focusing policy interventions at the levels of the community and households, where the costs of HIV will be concentrated, and where policies for behaviour change need to be made effective.

INTRODUCTION

It is almost a Sisyphean task to write a short and useful paper about the diverse ways in which HIV impacts on economic and social systems. Although it is readily agreed that HIV is a health problem it is not generally seen as a developmental one. Thus one objective of this paper is to shift perceptions. It will achieve a great deal if it deepens understanding of the ways in which HIV changes development prospects of diverse countries. It is unfortunate that the social sciences have as yet done little to analyze the linkage between social and economic phenomena and HIV, especially in terms of those factors that are:

- crucial in the spread of HIV;
- critical for prevention;
- determinant in their economic and social impact.

These are matters to which I return in my conclusions.

The plan of this paper is to:

1. develop a model that displays the multitude of ways in which HIV affects the economy;

2. show schematically why it is critical to put in place effective policies for prevention early in order to pre-empt inevitable social, economic and psychological costs later;
3. illustrate some of the methodologies already used to estimate the economic costs of HIV, with empirical results of such studies;
4. to establish some general conclusions.

HIV AND THE MACRO ECONOMY

It is important to note that the relationship is a two-way one: HIV affects the economy, and the economic system affects the level and distribution of HIV, for example, the clustering of HIV infection in urban-rural areas or poor and non-poor populations. An important example of the latter is that of labour migration where push-pull variables lead to labour redistribution, both domestically and internationally.

Poverty and poor economic prospects are often key variables in the decision to migrate. While the evidence is not conclusive, there is empirical support for the existence of a strong positive relationship between migrant labour flows and the spread of HIV. This in part reflects the younger age of migrant populations and the fact that there are both female and male specific migrations. It also reflects the relaxation of social norms and the new and often risky behaviours adopted by migrants.

Although this paper analyses the effect of HIV on the economy, it is a relatively simple matter to use the model of Figure 1 (not available) for exploring the reverse relationship.

The place to start exploring relationships is the box labeled HIV at the centre of Figure 1, entitled "A Model of the Economic Impact of HIV", then move to the two quadrants A1 and A2. The connection between A1 and A2 is the box labeled effective labour supply. Thus one of the two important ways in which HIV affects the economy is through reducing both the quantity and the quality of the labour available to produce output, that is, GNP. This is because HIV results in higher morbidity and higher mortality in particular age groups. The latter reduces what can be produced through the application of labour to other productive factors, such as land and capital.

The term "effective" is used to capture both quantitative and qualitative change. There is a reduction in the numbers of people in the major age groups that supply labour to the formal and informal sectors, and to measured and unmeasured activities. Women's unpaid domestic household labour, which is ignored by national accounting conventions, is an example of the latter. The quality of the labour force changes, and there is a new mix of the skilled and unskilled, with falling numbers of experienced workers in all sectors of economic activity.

In those societies that experience rising adult mortality, the passing on of acquired skills and knowledge, which has been such a major factor in the growth of labour productivity, diminishes. The capacity for the transfer of knowledge and of technical skills from worker to worker, and between generations, will be reduced. These are processes that have been taken for granted in the past, but that are now threatened by HIV. Yet they are an intrinsic part of the effective labour supply, and as such play a critical role in its determination over time.

Quadrant A 1: The Sources of Labour

The effect of HIV is to reduce the working population, which could worsen the dependency ratio. More children and elderly people will have to be supported by a smaller active labour force. It is not clear whether external labour flows will add to or subtract from the total working population. This factor could go either way. In some cases the most able and internationally most mobile labour could leave a country. There is also the possibility that a country could attract migrants, thus relieving some of its labour shortages, especially of skilled and professional workers.

The changing composition of the labour force is given by the boxes representing changing skill, education and experience of those available to produce output of all kinds, whether included or excluded by the GNP accounts. These factors will generally interact so as to cause a lower level of labour productivity, leading to a decline in the GNP growth rate.

The output of the economy will certainly be reduced by HIV and there will be a loss of potential production. If outputs not conventionally included in the GNP, such as women's work, are also considered, then the losses of potential output are even greater. Under these circumstances, it is inevitable that the rise of per capita GNP will be slower than it would otherwise have been in the absence of HIV. There is, however, a real possibility that under certain circumstances national output may actually decline. In such cases the GNP/per capita will fall and so will the standard of living as measured by such social indicators as, for example:

- a decline in life expectancy;
- reduced enrollments in schools;
- higher infant mortality.

Quadrant A 2: The Uses of Labour

This quadrant takes the effective labour supply and identifies the uses to which this labour is put by the economy. Some of the labour force may be unemployed or under-employed and this is shown by the box. In so far as this is the case, then under conditions of intensified labour constraints caused by HIV it becomes even more important to follow policies for fully utilizing this labour.

Today, in many developing countries there is a good deal of formal unemployment and under-employment. This often reflects a mismatch between the types of skills and educational level in demand and those present in the labour force. It also reflects shortages of complementary inputs, such as capital and foreign exchange, as well as demand constraints in many countries associated with Structural Adjustment Programmes (SAPs).

Many of these factors would continue to operate, even to be exacerbated by the impact of HIV. Thus, while the working population may be falling there may co-exist both unemployed and under-employed labour. What is different is that the social cost of under-utilizing the available labour is raised as labour constraints are intensified.

Quadrant A2 also shows the possible uses of the effective labour supply, in terms of public and private uses, between formal and informal sectors, and its industrial distribution. Any analysis of the effects on the economy of the falling and changing labour supply would need to disaggregate in this way and consider how each of these users of labour would be affected.

To take two examples: A mining industry that employs lots of skilled labour would find its costs rising through increasing illness and higher training costs caused by HIV. Similarly agricultural producers, faced by a falling labour supply, may switch from cash crops which are labour intensive to lower value-added food crops. This would reduce incomes, lower foreign exchange earnings for the economy, and lower tax yields for government. Shifts of production away from exports will inevitably reduce import capacity, with consequent effects on imports of raw materials, fuel, capital goods and so on. Shortages of critical imports will thus constrain the level of GNP, and of domestic employment, and intensify those forces causing cumulative economic decline.

In all cases where there is a falling effective labour supply attempts will be made to economize on the use of labour by substituting:

- more plentiful labour (unskilled) for less plentiful (skilled), subject to this being technologically possible;
- other inputs in production for labour, such as capital and/or land, also subject to technological constraints and the availability of finance, including foreign exchange, to meet the costs of such adjustments.

All this will take time. There is the real possibility that the economy as a whole, and some sectors in particular, will exhibit adjustment problems so that employment, incomes and output will be constrained, that is, lower. These adjustment costs can be partially offset by appropriate public and private policies. For example, advance planning for shortages of skilled and professional labour, and targeting credit programmes to remove critical bottlenecks in the production process, such as additional credit for pesticides and fertilizers in agriculture.

The other main way in which the economy will be affected by HIV is through the effect on the volume and uses of savings. For a developing country the quantity of savings available, and how these are employed will determine the rate of growth of GNP. The argument is that there exist many productive investment opportunities but that the level of savings, and possibly shortages of essential labour, constrains the rate of development. Savings are both a critical factor in the growth of an economy and a constraint. There are many reasons to believe that the effects of HIV will be to reduce total savings, and in so far as these decline there will be less investment, less productive employment, lower incomes, a slower rate of GNP growth, and possibly a lower level of GNP.

It should be noted that national savings are the outcome of what happens to Domestic Savings and the balance of capital inflow and outflow. That is to say, whether on balance the economy receives savings from overseas in the form of overseas development assistance and private overseas investment or the opposite where capital outflow exceeds capital inflow.

How important net capital inflow is as a contribution to savings, and thus to domestic investment, varies between countries. In the case of countries suffering from HIV, the issue is whether this contribution will tend to rise or fall, thus assisting in the maintenance of national savings capacity or the opposite. It could go either way. It seems more probable that less foreign savings will be net available in the aggregate, and that this will be a further depressive force for developing countries.

While it may be the case that an individual country such as Uganda may currently be able to attract an increasing volume of mainly official assistance (savings), induced by the problem of HIV, this seems unlikely to be the general case, nor one which is likely to be sustained. Rather it reflects the advanced state of the epidemic in Uganda, an historical situation that will be eroded as other countries begin to display similar HIV-related conditions. Externally supplied savings may decline in volume and will certainly fall relative to needs. Also, it seems inevitable that domestic savings will decline as all productive sectors are affected by the epidemic. Quadrants B3 and B4 explore these linkages.

Quadrant B 3: Sources of Income

This quadrant looks at the sources of savings to the economy. As can be seen, these come from foreign lending and private overseas investment minus any offsetting capital outflow, including capital flight. Domestic savings will be the outcome of the difference between domestic incomes and current, that is, consumption expenditures for each of the main sectors of the economy: government, business and households.

In the boxes the various sources of incomes by broad category for each sector are identified. Obviously each sector can add to its total capacity to spend by borrowing. This, however, entails the use of savings generated by others, including foreign savings. Each sector can also add to its current capacity to spend by disposing of assets, the sales of land, houses, and other personal assets. This would be a redistribution of assets and does not add to the flow of savings available to the economy. There are obvious limits both to borrowing and to asset sales as ways of financing expenditures, as is also true of the inflationary financing of government expenditure. In order to establish what is likely to happen to Domestic Savings it is necessary to consider what will happen to incomes, and thus how different sectors will be affected by HIV. To take two examples.

- Many households will lose one or more productive members through adult mortality so that family income will decline.
- In the case of government the revenues available will fall as the growth rate of the economy declines, and perhaps as a consequence of changes in the composition of national output. For example, away from highly taxed traded goods, imports and exports, to the production of lower value added non-traded goods, such as food.

Quadrant B 4: Uses of Income

As we have seen the level of national savings depends on domestic income less domestic expenditure on current output plus net savings from overseas. If, as a consequence of HIV, current consumption expenditures rise relative to income then there will be a lower domestic savings rate, and fewer domestic resources will be available to finance investment.

For investment to be maintained there would have to be a rise in net foreign inflows of capital sufficient to offset any decline in domestic savings, an outcome which seems improbable. An important factor in generating direct investment by foreign companies in several Asian economies over the past two decades has been the availability of low cost and plentiful labour. (Malaysia and Thailand offer good examples.) HIV has the potential for changing the costs of such labour as well as its availability. This investment from outside has been a critical element in the transformation and development of these economies, and any reduction will have severe implications for economic performance.

In these circumstances a decline in national savings, partly domestic and partly external in origin, will lead to a fall in the rate of investment, which will cause a decline in the GNP growth rate. The forces reducing domestic savings come partly from the side of incomes, those factors depressing domestic income growth, and partly from the side of expenditure, those factors raising domestic consumption expenditures. Additional national spending on health caused by HIV would raise domestic consumption expenditure.

The focus in Quadrant B4 is on precisely those factors that will cause domestic current expenditures to increase relative to domestic incomes. Again the emphasis is on the changing pattern and levels of expenditures, both of a current and of a capital (investment) category. Why might the pattern and levels of the main expenditure categories change as a result of HIV? To take a few examples:

- In the case of the Business Sector there will be a rise in labour costs as productivity declines due to higher morbidity and increased absenteeism, and additional training costs will be incurred as labour turnover increases. Other health and social expenditures will also rise, so that current outlays of firms, both public and private, will increase as a proportion of total expenditure. Under these circumstances the resources available to firms (savings) for financing capital expenditures will be reduced. Yet this will be precisely the opposite of what needs to happen, that is, additional investment in both machines and human resources to maintain output rates.
- The Government as an employer will be similarly affected. Its current expenditures will in general be raised by HIV, especially on health, and it will also need to increase budget allocations to deal with increasing numbers of orphans and an intensification of poverty. It will also need to spend at a higher rate to replenish the losses of human resources caused by higher adult mortality.
- In the case of Households, there may well be problems of maintaining food supplies, in both quantity and quality. In many cases there will be decline of family incomes because of higher adult morbidity and mortality, and additional expenditures on health.

Overall there are strong grounds for thinking that expenditures on current output will increase so that fewer resources are set aside for capital formation, that is, domestic savings will decline so that less investment is possible.

The overall conclusion seems unavoidable. All sectors of the economy will feel the impact of the epidemic and will inescapably have to incur additional costs: economic, social and psychological. There is no way that an economic calculus can estimate these total costs. Indeed as is apparent from the above, even the purely economic costs as conventionally estimated are inevitably a significant underestimation.

This follows from two assumptions commonly made by economics.

Firstly, the practice of ignoring non-marketed outputs in the estimation of GNP. Essentially this means ignoring the contribution of women, who will be at least as affected by HIV as men.

Secondly, the presumption that at high levels of infection the economic system functions as normal, but with a lower level of performance (lower GNP). When in fact the impact on the economic, social and political systems may be fundamental and structural. The consequences of system collapse are not something that economists can predict or even comprehend. Such collapse, however, may pose a threat to the continued functioning of some countries with high rates of seroprevalence. It follows that many of the estimates of the economic costs of HIV are partial at best, and as such represent a significant underestimation of the scale of the problem facing many developing countries.

AVOIDING THE COST OF AIDS: WHY PREVENTION IS CRUCIAL

This ought to be self evident as a strategy. Nevertheless, it is clear from the policies followed by many countries that they only dimly understand why early activities for effective prevention are absolutely critical for avoiding the economic, social and psychological costs of HIV. Activities implemented now that focus on behaviour change and that are based on a realistic understanding of the changes required to reduce the spread of infection, will generate enormous benefits in terms of the avoidance of future costs. This is standard cost/benefit analysis. As such it is very familiar ground for economists: small costs incurred today will generate enormous benefits in terms of costs avoided in the future. Ministries of finance and of planning need to take this critical rule into account when allocating funds.

Allocating funds for an epidemic such as HIV is in theory no different from any other decision about the use of public moneys. Except, however, that the expenditure will predate by many years the problem it is intended to forestall. This requires foresight and the willingness to look into the distant future. It demands an understanding of why, and in what ways, HIV poses a challenge to economic and social development. For governments, it means focusing on the long term benefits of public policy. And to do so in situations where the short term problems appear, and often are, overwhelming.

Even with the narrowest definition of the economic costs of HIV: health costs plus foregone output due to early mortality (see pages 13-14), the return on investment in the prevention of HIV transmission far exceeds that on conventional capital investment. One study, for Thailand, puts the yield on such investment at 17 times the budgetary outlay [Myers et al., 1991].

To try and estimate the future costs of HIV is no easy task. In part this is because prediction of the disease itself is fraught with known and unexpected difficulties. Although Part 3 does give some idea of the scale of costs entailed, the objective of this Section is to put the case for prevention in a purely schematic form. This is done in Figure 2, which sets out the proportional cost of delaying the start of an effective HIV programme. Note the following points about **Figure 2**:

(a) The costs shown on the right hand side are proportional costs at year 30 of the epidemic. These are notional costs, but are nevertheless real. These are not costs that can be estimated now, nor likely to be able to be predicted in the future. Looking back in time historically we may be able to make reasonable estimates of the narrowly economic costs inflicted on a country by HIV. Even this would entail fairly heroic assumptions, including the counter-factual case of what would have been the path of development in the absence of HIV.

(b) The difference in cost levels depends crucially on the stage that the epidemic has reached before an effective programme is implemented. This is self-evident. In the limiting case where effective policies for prevention are put in place at the start of the epidemic then the numbers infected and affected will be small, and the economic and social costs easily containable. If on the other hand there is delay in the implementation of policies for prevention to stage 2, when people are already ill and dying, then costs will be higher because more people will be infected and affected. Health and costs of care will be greater, there will be more survivors in need of support, and the output losses more significant. Because there will be greater adult mortality there will be a greater loss of potential output.

(c) The costs of starting an effective programme rise with the stage of the epidemic because there will be more sectors affected. In other words delay raises the costs of intervention itself.

(d) The cost at 30 years is greater the later an effective programme is started because there are more people infected, and there will be a commitment then to meeting the costs of the impact on those infected.

(e) The different cost levels at 30 years may differ from each other by factors of 10 or more. "May" is the operative word, in that at this point in time we just do not know.

The inescapable conclusion is that there is a disproportionate advantage in starting effective HIV programmes early.

MEASURING THE ECONOMIC COSTS

The following is not intended to be comprehensive, but rather to illustrate some of the alternative methodologies that investigators have used to estimate the economic costs of HIV. Most of the empirical work which has been done has been on high seroprevalence countries in Africa.

Very little is known about the costs elsewhere in the developing world, although this is now being remedied for some countries in Asia. In some cases it is necessary to predict what the impact will be on households from observing how these have responded to similar crises in the past. What is clearly needed, if policies are to be properly targeted, is a great deal of empirical work. Less at the macro level than at the sectoral, industrial and household levels. The following gives a flavour of what is known and provides some idea of how some empirical work has been conducted. No attempt is made to be comprehensive in the coverage of the available literature.

Macro Approaches

Here I want to make reference to three studies that illustrate alternative approaches. The first is a recent piece of economic modelling by Cuddington [1991], also reported in World Bank [1991]. The approach taken is to predict what would have been the performance of the main economic aggregates for Tanzania over the years 1985-2010 in the absence of HIV, and to then estimate how economic performance would be changed by superimposing particular assumptions with respect to the level of HIV on the base run of the model. Obviously it is possible to run the model with alternative HIV assumptions about the structure of the model. For example, with more disaggregation to reflect urban/rural and industrial/agricultural production structures.

A prior problem, of course, in attempting to estimate the long-term effects on the economy of HIV is to be able to predict the likely course of the epidemic. It would be unwise to think that epidemiological modelling is sufficiently advanced to permit us to look ahead with much confidence beyond a limit of five years into the future. Other major problems are estimating the quantitative effects of HIV on the domestic savings rate, and on the loss of productivity per HIV infection. What we called above the change in effective labour supply. The model can be tested for its sensitivity to both savings and productivity variables, and Cuddington does carry out this analysis to examine the sensitivity of the outcomes.

Figures 3 and 4 present Cuddington's main results. **Figure 3** for Gross Domestic Product (GDP) and **Figure 4** for GDP per capita, for Tanzania over the period 1985-2010. The growth rate of real GDP declines from an annual average without HIV of 3.8% to that of 2.8-3.2% with HIV. That is a reduction over the whole period of between 19 and 36% depending on the savings and productivity assumptions used. In the case of per capita GDP the rates of growth range from 0.2 to 0.6% per annum with HIV, compared with a no HIV situation of an estimated 0.6%. The conclusion is that the economy would undoubtedly grow more slowly in the presence of HIV, with a 1% reduction of real GDP per annum, but with a somewhat smaller impact on per capita GDP growth as the reduction in output growth is partly offset by slower population growth.

The second study is by Kambou, Devarajan and Over [1991]. In some ways it is similar to that of Cuddington in approach, but not in the modelling process. In a relatively unsophisticated economy (Cameroon), they have assumed that the effects of HIV on the economy come through a reduction in the supply of labour, and the consequences of this for wages and prices. This approach allows the disaggregation of the labour supply by skill and by urban and rural labour distribution, which it is argued is important for estimating the effects of HIV on the economy. The study marshalls some of the evidence for Sub-Saharan Africa that supports the proposition that HIV has a skill and education gradient. That is, that the epidemic is striking at those with the highest levels of education and productive skills, namely those embodying a substantial investment in human capital.

The researchers construct a model of the Cameroonian economy to explain the performance of the main economic aggregates over a recent period 1986-91 (the base run). Then, they superimpose on this the effects of an assumed level of HIV. The reference case is, therefore, a benchmark against which to judge the effects of HIV on the economy. The impact of HIV is assumed to take the form of a reduction annually of the labour supply, and the model is run with varying proportions of skilled/unskilled and urban/rural workers in the labour supply. Thereupon they present their results for the main economic aggregates as differences from the base run, i.e., no HIV case.

As might be predicted the worst effects on the economy's performance come when HIV primarily affects the supply of skilled urban workers:

"The impact on the economy is devastating: the growth rates of saving and investment fall sharply, leading to a steep decline in GDP growth rates. The decline in real output growth is accompanied by a deterioration of the competitiveness of the economy in international markets, which is reflected in the falling growth rates of exports, and a movement towards current account problems".

GDP growth rates decline from an annual average in the base run of 4.3% to 2.1% in the worst case, with deterioration in both the government budget balance and the external accounts. The study concludes, "rather than the total number of AIDS cases, it is the selective distribution of HIV infection that is potentially devastating for economic growth in the countries of

Sub-Saharan Africa".

The third macro study to be reviewed is that of Myers et al., [1991] on Thailand which is more traditional in its approach to measuring the economic impact of HIV. This is part of a group of studies that assumes that the costs of HIV can be split into direct (mainly health costs) and indirect (the output foregone by a country due to AIDS mortality). The sum of these two costs is then usually equated with the economic costs of HIV, although the Myers study does identify some other economic effects.

It confirms other studies which stress the virtual impossibility of families meeting from their own resources the health care costs of infected persons. Even at levels of treatment that exclude the most expensive therapies, the costs of health care would absorb some 30-50% of average household income in Thailand. Inevitably this will pose a major budgetary burden for the Thai Government, if it chose to try and meet it, and if it did so through traditional institutional mechanisms. Much more significant are the indirect costs, which are in the aggregate over the whole period 1991-2000 put at between US\$ 7.3 billion and US\$ 8.7 billion. The loss per AIDS death represented by these indirect costs is estimated at US\$ 22 000, i.e., some 17.6 times the per capita GDP in 1991. Not only are the estimated direct and indirect costs very substantial, together they amount to an annual cost of some 16-18 times per capita GDP, but the study confirms that indirect costs to the economy due to foregone output far exceeds the direct costs due to health expenditures.

There is not much which needs to be said about the conclusions drawn in these three examples of macro-modelling of the impact of HIV. The impact can be shown to be very significant for economic performance, but the results do need to be considered with a high degree of caution. It cannot be said that econometric modelling, such as Cuddington and Kanbou et al., has a good track record. Also, it should be readily admitted that we know relatively little about those structural relationships which are important for estimating the impact of HIV on development. What has been done so far has been fairly simplistic, and should at best be viewed only as an indicator of the potential scale of the impact of HIV on economic performance. However, there is other evidence suggesting that for high seroprevalence countries the effects may be more severe than these studies indicate. Thus confirming that we are dealing here with issues of major economic significance. What stands out from the Thailand study of Myers et al., is how much larger are the costs to the economy from lost output due to AIDS mortality. These costs vastly exceed the direct costs of health care, and it is these indirect costs broadly defined which are the main source of the economic losses that are imposed on countries by the HIV epidemic.

Sectoral Studies

Research at the sectoral level is more likely to be useful in informing policy than macro-modeling, and if resources are to be expended then sector impact studies are more likely to be productive. So far much of the work has been on Africa. Very little of it has been about the actual sectoral and industrial impact of HIV as opposed to its probable impact, given the structural characteristics of production. This is unsurprising since the impact of the epidemic at this level of aggregation has yet to be felt, except in one or two specific cases.

Typical studies in this area examine the effect of labour supply changes on farm systems and on particular types of crops. The dependence of production on labour inputs in general, and on peak labour needs in particular, are identified for categories of producers, differentiated by size and types of products. Such categorization might also include whether producers are male or female headed households, the degree to which they use hired labour, and for what purposes. What in effect is being measured by such studies is the vulnerability of farm systems to HIV morbidity and mortality, and implicitly the vulnerability of different types of producing units. The latter may display stress much earlier than the system, since some producers will be more marginal and vulnerable than others to changes in the labour supply.

For many developing countries, with relatively elementary economic structures, the consequences for food output and for cash crops are of fundamental importance. Policy makers need to be informed in advance where the stress points lie, and what can be done to relieve these through policy interventions.

There are a number of studies of the impact on farm systems to which reference can usefully be made. Barnett and Blaikie [1990, 1992] looked at the vulnerability of Ugandan farm systems under various criteria. They found that of a total of 50 systems, 9 were vulnerable to shortages of labour and existing shortages of protein and energy; and 17 were vulnerable on the criterion of existing or potential shortages of labour or of protein and energy deficiencies. They also observed: "vulnerable households within each farming system may show signs of stress long before the farming system as a whole does ... poorer households may well be seriously affected by lower incidence of the disease." [1990]. Table 1 is a useful taxonomy of the various coping strategies identified by Barnett and Blaikie, at the level of the homestead, farm and market. It succinctly summarizes some of the alternative strategies that may be available at each level of organization. Accordingly, it is worthwhile for the reader to consider some of these alternatives in more detail, in part because they illustrate the complexity of possible impacts and responses. What is brought out is the need for some kind of dynamic analysis that captures behavioural responses.

Unfortunately it is too easy to take a static picture of the situation: to start with the present non-HIV case and to superimpose on it an assumed change in labour supply as if this was the end of the story. Certain farm impact case studies do precisely this, and as a consequence are less than acceptable as analyses of the vulnerability of farming structures. Economic systems are not static, but are characterized by behavioural responses to all the changing phenomena that affect decisions. HIV will have, is having already, multiple effects, and is generating responses that need to be considered if there is to be understanding of the economic impact.

There is a need to model farming systems in ways that reflect their complex social and economic relationships, and to move the analysis and estimation beyond the boundaries usually set by farm management studies. In particular studies need to recognize the existence of rural labour markets, which actually behave in ways different from those assumed by most economists. Yet these markets will be crucial in meeting the constraints placed on production by declines in labour supplies. Sender and Smith's [1990] study of Tanzanian rural labour markets demonstrates the importance of these markets, and the complexity of the analysis required to make sense of their operation.

Of particular importance are likely changes in key prices in the economic system in the face of changing demands and supplies. These include changes in the absolute and relative prices of commodities, in particular food and services such as transport, as well as changes in wages and interest rates. Consequently, certain key economic parameters will be altered in response to the changing availabilities of labour and of savings. This in turn will set in motion behavioural responses, thereby causing revision of decisions about resource allocations of the kinds identified in Table 1. The imperative for researchers should be to undertake analysis of the impact of HIV on factor prices, interest rates and wages, especially the latter, within frameworks which are realistic. In this respect the research of Sender and Smith [1990] on rural Tanzania, and of Vandemoortele [1991] on African urban labour markets, point the way for those intent on useful applied research on HIV.

An interesting study is that by Norse [1991] which looked at both food and cash production by Malawian smallholders. From farm management data it is possible to estimate for typical producers of maize, cassava, ground nuts, tobacco, cotton etc., differentiated by size of holding, what the impact will be of changes in labour supply and of cash remittances. This latter variable is important in Malawi, and other countries, where members of the household, usually the male head, have migrated to urban centres, including international destinations.

Dependence on remittances for survival in many rural communities opens up a further element of vulnerability. Norse found that female headed households were especially vulnerable to changes in labour supply and to reductions in the flow of remittances, and that certain cash crops, tobacco and cotton, were particularly vulnerable to changes in the availability of labour. It needs to be noted that Norse was looking at smallholder production. He did not consider the large commercial estate producers who, while they account for a small proportion of the total number of producers, do account for most of the exported cash crop production. What their responses will be to labour shortages was not explored, but that they would have to adjust to deteriorating labour supply conditions goes without saying. What is important for estates, as it will be for many smallholders who use hired labour, will be what happens to wages under conditions of falling labour supplies. Hence, what will be the impact on overall costs?

All industries will be affected by the HIV epidemic, directly through their labour supply, and indirectly through re-allocations of demand, as consumers allocate more of their income to health expenditures. It is obvious that some industries are exceptionally vulnerable to the effects of HIV. A case of this is the Zambian copper industry. It accounts for virtually the whole of the export earnings of the country (90%), and for about 25% of GDP. Seropositivity is already high, and it is predicted that by the end of the 1990s some 60% of the labour force will be HIV-positive [Desmond, 1989]. Much of this labour is skilled, and reflects a major investment on the part of the State and individuals. This poses immense problems with respect to skilled labour replacement for a poor and resource-scarce country.

Countries dependent on tourism for employment and foreign exchange are also extremely vulnerable from:

@ the erosion of their labour supplies;

@ a re-ordering of domestic demand priorities as incomes are constrained by HIV;

@ demand shifts as foreign tourists seek out what they consider to be less risky destinations.

Cases in point here are Kenya and Thailand, where the evidence suggests that delay in establishing policies for HIV prevention clearly owed much to concern that tourists might go elsewhere. An understandable decision given their dependence on the foreign exchange earnings of this sector. In the case of Thailand accounting for net foreign exchange earnings of some 10% of total foreign exchange received from all sources. This delay, as Section 2 above makes clear, was a most unfortunate decision. It has been instrumental, in part, for the rapidity of the spread of HIV in both these countries. Both countries have been more open recently about their HIV situation without any obvious impact on tourism.

While it must be assumed that the sex entertainment industry of Thailand is now vulnerable to shifts in international demand, it should be noted that much of the demand for the services of commercial sex workers (CSWs) is in fact internally generated. There is a complex intra-industry relationship between internal and external demand, and it is by no means a simple matter to predict what the effects of shifts in the composition of demand would be on this industry. It is not obvious yet that demand, internal or external, has been affected by increasing information about the risks of HIV, although there must be a point at which it is. Indeed the Thai government, which recently has been more open about the level of HIV, will have to do much more to restrain demand, from whatever source. To date, there is little evidence that activities undertaken to change the conditions under which the CSW industry functions are having much of the desired effect. The way forward in terms of protecting employment and the contribution to GNP and to foreign exchange of tourism in the case of Thailand is obvious: it is to shift the pattern of foreign tourist demand. Even if this was achieved as an objective, the crucially important domestically generated factors which spread HIV would remain, and the core of the economic and social problems caused by HIV would be more or less unchanged.

One sector that plays a crucial role in the integration of national markets for labour as well as for commodity and service

production is transport. This sector also seems to play an important role in the spread of HIV. Various studies have looked at the role of truck drivers, both in Africa and in Asia, in the spread of HIV. It has long been observed that HIV seems to cluster in the main transport hubs of a country: major ports, communities that are important truck stops, and along main highways. Our interest here is in the consequences of infection for the transport sector's performance, and the implications of high infection rates amongst employees of transport enterprises for the general performance of the economy.

This turns out to be a complex matter, and there is only one study in detail on these matters and it is for Thailand's trucking industry [Giraud, 1992]. This study suggests that for firms and government the build-up of costs caused by HIV, through the impact on social programmes, become very significant within 10 years. There are, of course, implications for other sectors of the economy as cost increases feed through into user charges that impose an additional burden on the economy. Giraud's study is pathbreaking. It is the only example of the detailed estimation of the effects of HIV on a productive sector of this type in a developing country. It represents the kind of research that is sorely needed in other countries.

It would be possible to go through a catalogue of industries, but this is probably unnecessary. However, it may be worthwhile making reference to Financial Services, since this sector will also be affected by HIV. It, too, will be faced by changing conditions of labour supply, and it will be affected by changing levels of income that reduce savings. In addition, there will be industry specific effects. Insurance companies are, in some countries, requiring HIV testing prior to writing life and mortgage indemnity policies. In some cases annual testing is required for a minimum period where seronegativity has to be satisfied. Obviously conditions relating to mortgage repayment are changed by HIV. In Kenya, for example, an HIV test is now sometimes required before an advance is made. Where positivity is found only a smaller advance is forthcoming. In the case of health insurance, but also in the case of social security systems generally, there are major problems caused by HIV that have to be addressed. In the case of social security this is mainly a problem for government, but not entirely, given the existence of private pension and health insurance arrangements in some countries.

The catalogue of impacts here are many, and a multitude of financial institutions are affected and will need to respond. I know of no particular studies which have addressed these issues in developing countries, although there are isolated examples of institutions changing their policies in the face of HIV. These are areas where government has particular interests so as to ensure that institutions in their actions are fair, reasonable, and consistent with the national HIV strategy. There are obviously fundamental questions here about the continuing financial viability of institutions, both private and public, which need to be addressed. Not least are issues to do with lending, and how "prudent" lending criteria are changed in a world of HIV. Changes in banking practices have to be managed so as to serve multiple interests and not simply reflect those of conservative finance. What are needed are innovations in lending behaviour that help contain the adverse economic and social impacts of the epidemic.

Impacts on Households

Because there is a wider range of literature on the impact of HIV on households, particularly for some African countries, this Section will be brief. The material is well reviewed by Devereux and Eele [1991], who make interesting use of studies on the impact of famine and other illnesses, such as river blindness, to predict how households and communities might cope with HIV. The costs for a family of a prolonged illness include additional expenditures particularly on health, lost income, and re-allocation of work and domestic responsibilities. It is inevitably the case that some households will be more able to meet these costs than others. As one would expect, those with fewest assets are the most vulnerable. There is evidence that poor households incur debt in order to meet additional health costs. That they try, as far as possible, to hold on to productive assets, such as land, trees, for as long as possible to protect the continued existence of the family. Death itself imposes additional economic costs, which in many societies further drain the resources available to households.

Such costs are, of course, only a fraction of those that individuals and families have to bear. The other costs, of trauma and grief, are rarely included in evaluations. Secondary costs are also inevitable:

- @ reduced access to education;
- @ reduced future income streams;
- @ losses of capacity for domestic work within households;
- @ reduced capacity for the care of dependents, both the young and the elderly; and
- @ the possibility of structural changes within households, that is, the dissolution of families.

The evidence from many countries in Africa is that many families and communities are coping with the economic and other costs of HIV, but that policy interventions are needed now to assist the most vulnerable.

What is clear is that both the personal and social costs of HIV will be pervasive and substantial. For countries that are unable to contain the spread of HIV, which may be most of the developing world, the costs will be quantitatively large and they will persist for many years into the future. In this sense the HIV epidemic is unlike a famine or some other kind of reversible shock to the economic and social structure. Consequently, the coping strategies may have to be quite different in the face of cumulative distress.

These adverse impacts are being felt in many countries, and will be felt in many others before the end of this decade. The

Changes in domestic work organization:

- increase time spent
- decrease time spent
- alter work distribution among household members (may affect women)

Change in level of life/welfare of household members:

- poorer diet (*restricted range of food, less preparation time*)
- poorer housing (less time for repairs)
- less access to education (particularly girls)

The Farm**Changes in farm work organization:**

- increase time spent on farm
- decrease time spent on farm
- hire labour
- substitute other inputs for labour

Changes in farm practice:

- decrease crop range
- cut out cash crops
- cut out some food crops
- adopt intercropping

The Market**Changes in cash income earning:**

- loss of remittances
- loss of cash income because of need to use time for domestic/farm work
- sale of food crops
- sale of handicrafts
- other petty trade
- sale of household labour

Source: Barnett and Blaikie (1990: xiii-xiv)

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