

FOIA MARKER

This is not a textual record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

Collection/Record Group: Clinton Presidential Records

Subgroup/Office of Origin: National AIDS Policy Office

Series/Staff Member: Todd Summers

Subseries:

OA/ID Number: 21088

FolderID:

Folder Title:

Issues - Economic Impact of AIDS

Stack:

S

Row:

66

Section:

6

Shelf:

2

Position:

2

The Economic Impact of AIDS

reinforce
do >

AIDS has the potential to create severe economic impacts in many African countries. It is different from most other diseases because it strikes people in the most productive age groups and is essentially 100 percent fatal. The effects will vary according to the severity of the AIDS epidemic and the structure of the national economies. The two major economic effects are a reduction in the labor supply and increased costs:

Labor Supply

- The loss of young adults in their most productive years will affect overall economic output
- If AIDS is more prevalent among the economic elite, then the impact may be much larger than the absolute number of AIDS deaths indicates

Costs

- The direct costs of AIDS include expenditures for medical care, drugs, and funeral expenses
- Indirect costs include lost time due to illness, recruitment and training costs to replace workers, and care of orphans
- If costs are financed out of savings, then the reduction in investment could lead to a significant reduction in economic growth

A World Bank study of the economic impacts of AIDS in Africa concluded that the macroeconomic impacts of AIDS could be significant.¹ Yet there is still time to mitigate the economic impact of AIDS; over half of Africa's population live in countries where the epidemic is "concentrated," that is, where HIV infection is concentrated in groups with risky behavior and is not yet widespread in the general population.²

The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy. This paper will consider each of these levels in turn and provide examples from various African countries to illustrate these impacts.

Economic Impact of AIDS on Households

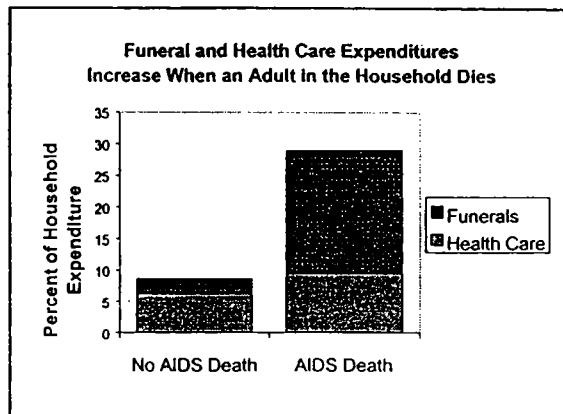
The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
- Household expenditures for medical expenses may increase substantially
- Other members of the household, usually daughters and wives, may miss school or work less in order to care for the sick person
- Death results in: a permanent loss of income, from less labor on the farm or from lower remittances; funeral and mourning costs; and the removal of

children from school in order to save on educational expenses and increase household labor, resulting in a severe loss of future earning potential.

Studies in Tanzania, Coté d'Ivoire, Uganda, and Ethiopia have documented the tremendous burden of loss of income, large health care expenditures, and consumption of savings to pay for funeral and mourning costs:

- In **Tanzania**, a study of adult mortality found that, 8 percent of total household expenditure went to medical care and funerals in households that had an adult death in the preceding 12 months. In households with no adult death the figure was only 0.8 percent. In addition to increased expenditures, many households experienced a reduction in remittances if the adult member worked outside the home. In partial compensation for these financial setbacks, many households were forced to remove children from school in order to reduce education-related expenditures and have the children help with household chores.³



graph does not reflect text.

- In **Cote d'Ivoire**, households with an HIV/AIDS patient spent twice as much on medical expenses as other households. Furthermore, 80 percent of the expenditures went to the AIDS patient, rather than to other household members who are ill. When the person with AIDS died or moved away, average consumption fell by as much as 44 percent during the following year.⁴
- In **Uganda**, the economic impact of HIV-related deaths was stronger than other types of death, as households lost much of their savings in order to pay health care and funeral expenditures. Asset ownership declined when the death of an HIV+ member occurred, but remained stable when the death was of an HIV- member.⁵
- In **Ethiopia**, a study of 25 AIDS-afflicted rural families found that the average cost of treatment, funeral and mourning expenses amounted to several times the average household income.⁶

Economic Impact of AIDS on Agriculture

Agriculture is the largest sector in most African economies accounting for a large portion of production and a majority of employment. Studies done in Tanzania and other countries have shown that AIDS will have adverse effects on agriculture, including loss of labor supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In countries

where food security has been a continuous issue because of drought, any declines in household production can have serious consequences. Additionally, a loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops.⁷ Thus, AIDS could affect the production of cash crops as well as food crops.

- A study done by the **Zimbabwe Farmers Union (ZFU)** showed that the death of a breadwinner due to AIDS will cut the production of maize in small scale farming and communal areas by 61 percent. Similar results were obtained for other crops (see table at right). The fall in output results from losses of labor and remittances and the need to spend scarce resources on medical expenses.

Reduction in Production Due to AIDS Deaths in Zimbabwe	
Crops	Reduction in Output
Maize	61%
Cotton	47%
Vegetables	49%
Groundnuts	37%
Cattle Owned	29%

- In **Ethiopia**, the male head of the household is responsible for special tasks, such as oxen cultivation, harvesting, threshing and farm management. One study found that the effect of an AIDS death varied by region: it would have the most severe effect on harvesting teff in Nazareth, on digging holes for transplanting enset plants in Atat, on ploughing millet fields in Baherdar, and on picking coffee in Yirgalem. Women are generally responsible for other tasks: leveling, weeding, harvesting minor crops, transporting produce, and household duties. The death of the wife to AIDS can make it difficult for other household members to carry out these tasks, in addition to caring for children. The death of a family member because of AIDS also leads to a reduction in savings and investment. The stock of food grain can be depleted to provide food for mourners and the other expenses were met most often by selling livestock. Such loss of productive assets only makes it harder to survive in the future.⁸
- In **Kagabiro village, Tanzania**, when a household contained an AIDS patient, the household labor supply was severely affected: on average, 29% of household labor was spent on AIDS-related matters, including care of the patient and funeral duties. If two people were devoted to nursing duties, as occurred in 66% of the cases, the total labor loss was 43%, on average.⁹

- In **Malawi**, 10% of GDP comes from estate agriculture. A recent study evaluated the costs of HIV/AIDS on a tea estate there (see table at right). The study found that the costs are determined by the levels of both employee benefits and of skilled labor necessary for production. It predicted that, in the longer term,

Cost of HIV/AIDS on a Tea Estate in Malawi			
Description	Total Cost (£)	Related to HIV (%)	Cost of HIV (£)
Provision of medical services	22,275	25	5,569
Funeral costs	928	75	696
Death in service benefits	4,691	100	4,691
Absence	14,875	25	3,719
Total	42,769		14,675

the negative impact on the supply of skilled labor will be the strongest effect of HIV/AIDS.¹⁰ It will become increasingly difficult to recruit skilled people, even at the national level.

- Data collected in **Uganda** indicate that agricultural tasks were frequently disrupted when women needed to care for household members ill with AIDS-related conditions.¹¹

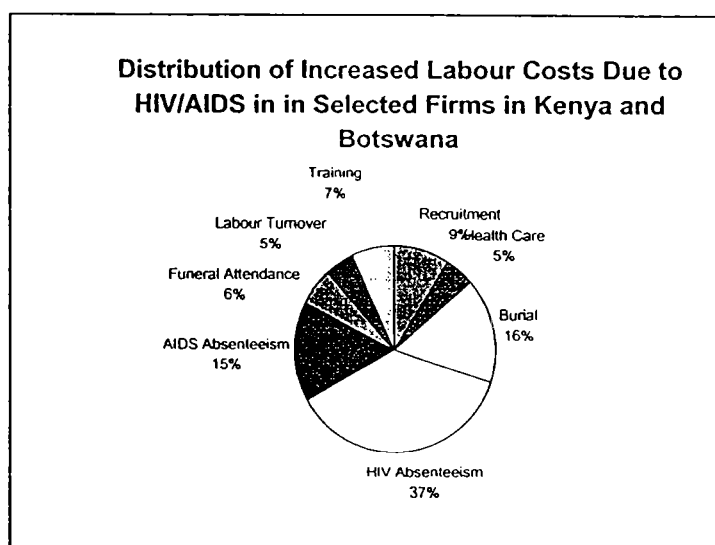
Economic Impact of AIDS on Firms

AIDS may have a significant impact on some firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Expenditures are increased for health care costs, burial fees and training and recruitment of replacement employees. Revenues may be decreased because of absenteeism due to illness or attendance at funerals and time spent on training. Labor turnover can lead to a less experienced labor force that is less productive.

Factors Leading to Increased Expenditure	Factors Leading to Decreased Revenue
Health care costs	Absenteeism due to illness
Burial fees	Time off to attend funerals
Training and recruitment	Time spent on training
	Labor turnover

The actual distribution of these costs has been calculated as part of various USAID-funded AIDSCAP studies of the private sector impact of AIDS:

- One study examining several firms in **Botswana** and **Kenya** showed that the most significant factors in increased labor costs were absenteeism due to HIV or AIDS and increased burial costs as shown in the figure to the right.¹²



- Another study in **Zimbabwe** found that the major expense was health care costs. The transport company in this study has a large staff of 11,500 workers. Since the company offers significant health benefits to its employees, the cost of AIDS is even higher than for other companies that do not provide such benefits. The study estimated that there are currently more than 3,400 workers who are infected with HIV and 64 who died from AIDS in 1996. The total costs of AIDS to the company in 1996 were estimated at Z\$39 million, equal to about 20 percent of the company's profits. More than half of

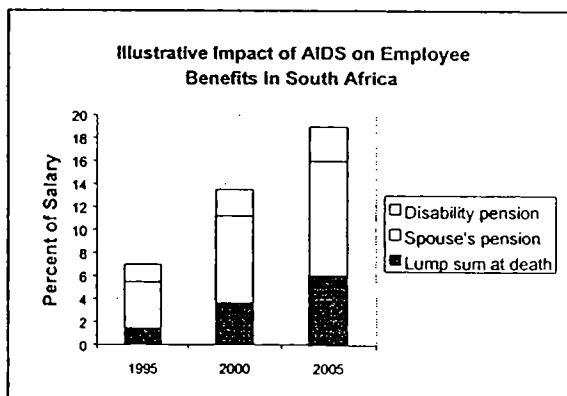
this amount resulted from increased health care costs. By 2005 the cost of AIDS to the company could reach Z\$108 million. There may be indirect costs as well. The report speculates that HIV/AIDS will worsen employee morale and create greater labor-management tensions and cause a labor shortage among skilled positions.¹³

Various studies have also examined the total annual cost of AIDS to different companies, as well as the annual cost of AIDS per employee.¹⁴ These studies found that the annual cost of AIDS per employee varied from US\$17 to US\$300, as shown in the table below:

Company Name	Total Annual Cost of AIDS	Annual Cost of AIDS per Employee
Botswana Diamond Valuing	US\$ 125,941	US\$ 237
Botswana Meat Commission	US\$ 370,200	US\$ 268
Cote d'Ivoire food processing firm	US\$ 33,207	US\$ 120
Cote d'Ivoire textile firm	US\$ 32,667	US\$ 29
Cote d'Ivoire packaging firm	US\$ 10,398	US\$ 125
Kenyan automobile firm	US\$ 21,312	US\$ 17
Kenyan transport firm	US\$ 61,132	US\$ 28
Muhoroni Sugar, Kenya	US\$ 58,303	US\$ 49
Kenyan lumber firm	US\$ 40,630	US\$ 25
Uganda Railway Corporation	US\$ 77,000	US\$ 300

Increased labor costs can reduce the profits necessary for expansion. This impact on profits can be considerable:

- The Indeni Petroleum Refinery in **Zambia** spent US\$26,400 on AIDS-related costs in 1994, more than its declared profits of US\$25,514 in that year.¹⁵
- A study in **South Africa** examined the expected impact of AIDS on employee benefits, and thus on corporate profits. It found that at current levels of benefits per employee, the total costs of benefits would rise from 7 percent of salaries in 1995 to 19 percent by 2005. Since these additional costs will have to be paid at the same time that productivity is declining, due to AIDS, the net impact on profits could be significant.¹⁶



Finally, other costs associated with AIDS that firms face include:

- The **Uganda** Railway Corporation has been hard hit by AIDS among its employees, experiencing a labor turnover rate of 15 percent per year in recent years.¹⁷

- Medical aid companies in **Zimbabwe** have estimated that meeting all the claims of just one percent of HIV-infected members could result in a 31 percent increase in insurance rates. Most of this increase would have to be paid by employers.¹⁸

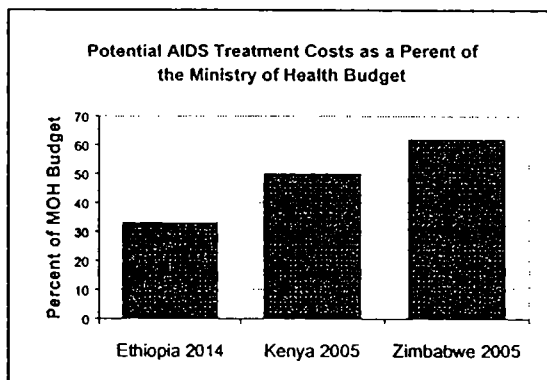
For some smaller firms the loss of one or more key employees could be catastrophic, leading to the collapse of the firm. In others, the impact may be small. Firms in some key sectors, such as transportation and mining, are likely to suffer larger impacts than firms in other sectors. In poorly managed situations the HIV-related costs to companies can be high. However, with proactive management these costs can be mitigated through effective prevention and management strategies.

Impacts on Other Economic Sectors

AIDS will also have significant effects in other key sectors. Among them are health, transport, mining, education and water,

*for civil servants and the military.
(have more access to cash)*

- **Health.** AIDS will affect the health sector for two reasons: (1) it will increase the number of people seeking services and (2) health care for AIDS patients is more expensive than for most other conditions. The number of AIDS patients seeking care is already overwhelming health care systems. In many hospitals in Africa, half of hospital beds are now occupied by AIDS patients. AIDS is also an



expensive disease. The graph shows projected expenditure on AIDS as a percentage of public health spending for three African countries.¹⁹ On average, treating an AIDS patient for one year is about as expensive as educating ten primary school students for one year. Governments will face trade-offs along at least three dimensions: treating AIDS versus preventing HIV infection; treating AIDS versus treating other illnesses; and spending for health versus spending for other objectives. Maintaining a healthy population is an important goal in its own right and is crucial to the development of a productive workforce essential for economic development.

- **Transport.** The transport sector is especially vulnerable to AIDS and important to AIDS prevention. Building and maintaining transport infrastructure often involves sending teams of men away from their families for extended periods of time, increasing the likelihood of multiple sexual partners. The people who operate transport services (truck drivers, train crews, sailors) spend many days and nights away from their families. A survey of bus and truck drivers in Cameroon found that they spent an average of 14 days away from home on each trip and that 68 percent had sex during the most recent trip and 25 percent had sex every night they were away.²⁰ Most transport managers are highly trained professionals who are hard to

replace if they die. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.

- **Mining.** The mining sector is a key source of foreign exchange for many countries. Most mining is conducted at sites far from population centers forcing workers to live apart from their families for extended periods of time. They often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. Highly trained mining engineers can be very difficult to replace. As a result, a severe AIDS epidemic can seriously threaten mine production.
- **Education.** AIDS affects the education sector in at least three ways: the supply of experienced teachers will be reduced by AIDS-related illness and death; children may be kept out of school if they are needed at home to care for sick family members or to work in the fields; and children may drop out of school if their families can not afford school fees due to reduced household income as a result of an AIDS death. Another problem is that teenage children are especially susceptible to HIV infection. Therefore, the education system also faces a special challenge to educate students about AIDS and equip them to protect themselves.
Same resources spent on education will be lost if kids die of AIDS. The more skilled, the greater the loss.
- **Water.** Developing water resources in arid areas and controlling excess water during rainy periods requires highly skilled water engineers and constant maintenance of wells, dams, embankments, etc. The loss of even a small number of highly trained engineers can place entire water systems and significant investment at risk. These engineers may be especially susceptible to HIV because of the need to spend many nights away from their families.

Macroeconomic Impact of AIDS

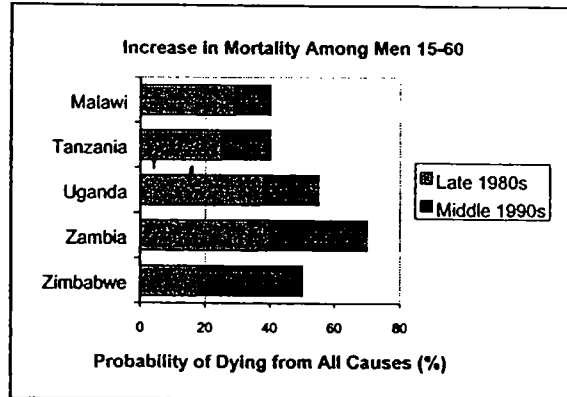
→ move up in the paper (earlier)

The macroeconomic impact of AIDS is difficult to assess. Most studies have found that estimates of the macroeconomic impacts are sensitive to assumptions about how AIDS affects savings and investment rates and whether AIDS affects the best-educated employees more than others. Few studies have been able to incorporate the impacts at the household and firm level in macroeconomic projections. Some studies have found that the impacts may be small, especially if there is a plentiful supply of excess labor and worker benefits are small. Other studies have found significant macroeconomic impacts. Studies in Tanzania, Cameroon, Zambia, Swaziland, Kenya and other sub-Saharan African countries have found that the rate of economic growth could be reduced by as much as 25 percent over a 20-year period.

also, macroecon. impact depends on structure of the economy.

There are several mechanisms by which AIDS affects macroeconomic performance.

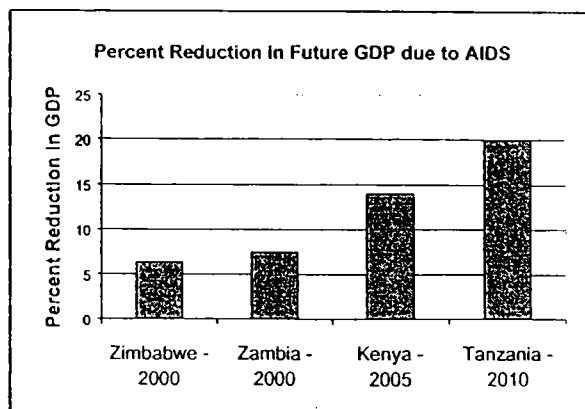
- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced. The graph to the right illustrates the magnitude of the problem in five African countries.²¹ It shows the increase in mortality among men of working age from the late 1980s to the mid-1990s. Most, if not all, of this increase is due to AIDS.



- A shortage of workers leads to higher wages, which leads to higher domestic production costs. Higher production costs lead to a loss of international competitiveness which can cause foreign exchange shortages.
- Lower government revenues and reduced private savings (because of greater health care expenditures and a loss of worker income) can cause a significant drop in savings and capital accumulation. This leads to slower employment creation in the formal sector, which is particularly capital intensive.
- Reduced worker productivity and investment leads to fewer jobs in the formal sector. As a result some workers will be pushed from high paying jobs in the formal sector to lower paying jobs in the informal sector.
- The overall impact of AIDS on the macro-economy is small at first but increases significantly over time.

Several studies have found that these effects could be large in some African countries.

- A World Bank study examined the macroeconomic impact of AIDS in 30 sub-Saharan African countries.²² This study concluded that the net effect is likely to be a reduction of the annual growth rate of GDP of 0.8 to 1.4 percentage points per year and a 0.3 percentage point reduction in the annual growth rate of GDP per capita.



Very important

- A simulation model of the economy of **Cameroon** concluded that the annual growth rate of GDP could have been reduced by as much as 2 percentage points during the 1987-1991 period because of AIDS.²³
- A study of the macroeconomic impacts of AIDS in **Zambia** found that by 2000 the GDP would be 5 to 10 percent lower because of AIDS than it would be if there were no AIDS affecting the population. The authors concluded, "...without unprecedented infusions of free foreign aid to mitigate the effects of AIDS, the economy of Zambia will suffer considerable damage."²⁴
- An assessment of the macroeconomic impacts of AIDS in **Tanzania** by the Government of Tanzania, the World Bank and the World Health Organization in 1991 found that total GDP will be 15 to 25 percent smaller in 2010 because of the impact of AIDS.²⁵
- A study of the impact of AIDS on the economy of **Kenya** projected that GDP will be 14 percent lower in 2005 than it would have been without AIDS. GDP per capita will be 10 percent less in 2005.²⁶
- Effects on savings in country.
- Effects on private sector & investment.

What Can Be Done?

AIDS has the potential to cause severe deterioration in the economic conditions of many countries. However, this is not inevitable. There is much that can be done now to keep the epidemic from getting worse and to mitigate the negative effects. Among the responses that are necessary are:

- Plan for AIDS in all development sectors.
- **Prevent new infections.** The most effective response will be to support programs to reduce the number of new infections in the future. After more than a decade of research and pilot programs, we now know how to prevent most new infections. An effective national response should include information, education and communications; voluntary counseling and testing; condom promotion and availability; expanded and improved services to prevent and treat sexually transmitted diseases; and efforts to protect human rights and reduce stigma and discrimination. Governments, NGOs and the commercial sector, working together in a multi-sectoral effort can make a difference. Workplace-based programs can prevent new infections among experienced workers.
- **Design major development projects appropriately.** Some major development activities may inadvertently facilitate the spread of HIV. Major construction projects often require large numbers of male workers to live apart from their families for extended periods of time, leading to increased opportunities for commercial sex. A World Bank-funded pipeline construction project in Cameroon was redesigned to avoid this problem by creating special villages where workers could live with their families. Special prevention programs can be put in place from the very beginning in

projects such as mines or new ports where commercial sex might be expected to flourish.

- **Programs to address specific problems.** Special programs can mitigate the impact of AIDS by addressing some of the most severe problems. Reduced school fees can help children from poor families and AIDS orphans stay in school longer and avoid deterioration in the education level of the workforce. Tax benefits or other incentives for training can encourage firms to maintain worker productivity in spite of the loss of experienced workers.
- **Mitigate the effects of AIDS on poverty.** The impacts of AIDS on households can be reduced to some extent by publicly funded programs to address the most severe problems. Such programs have included home care for people with HIV/AIDS, support for the basic needs of the households coping with AIDS, foster care for AIDS orphans, food programs for children and support for educational expenses. Such programs can help families and particularly children survive some of the consequences of an adult AIDS death that occur when families are poor or become poor as a result of the costs of AIDS. The costs of these programs can vary widely.²⁷

Annual Costs of Programmes to Mitigate the Household Impacts of AIDS, Kagera, Tanzania, 1992

Type of Programme	Annual Cost (US\$)
Home care for people with AIDS	\$227 per patient
Orphanage care	\$1,063 per child
Foster care	\$185 per child
Feeding post	\$69 per child
Basic needs support	\$47 per household
Educational support	\$13 per child

A strong political commitment to the fight against AIDS is crucial. Countries that have shown the most success, such as Uganda, Thailand and Senegal, all have strong support from the top political leaders. This support is critical for several reasons. First, it sets the stage for an open approach to AIDS that helps to reduce the stigma and discrimination that often hamper prevention efforts. Second, it facilitates a multi-sectoral approach by making it clear that the fight against AIDS is a national priority. Third, it signals to individuals and community organizations involved in the AIDS programs that their efforts are appreciated and valued. Finally, it ensures that the program will receive an appropriate share of national and international donor resources to fund important programs.

Perhaps the most important role for the government in the fight against AIDS is to ensure an open and supportive environment for effective programs. Governments need to make AIDS a national priority, not a problem to be avoided. By stimulating and supporting a broad multi-sectoral approach that includes all segments of society, governments can create the conditions in which prevention, care and mitigation programs can succeed and protect the country's future development prospects.

- ¹ Over, M. 1992. The Macroeconomic Impact of AIDS in Sub-Saharan Africa. AFTPN Technical Working Paper 3. World Bank, Africa Technical Department, Population, Health, and Nutrition Division, Washington, DC.
- ² Ainsworth, M and M Over. 1998. AIDS and Development: The Role of Government. AIDS; 12(5): 12-13. IAS Newsletter No. 9.
- ³ Mead Over, Martha Ainsworth, et al. 1996. Coping with AIDS: The Economic Impact of Adult Mortality from AIDS and Other Causes on Households in Kagera, Tanzania.
- ⁴ Bechu, N. 1998. The impact of AIDS on the economy of families in Cote d'Ivoire: Changes in consumption among AIDS-affected households. In M Ainsworth, L Fransen, and M Over, eds., Confronting AIDS: Evidence from the developing world: Selected background papers for the World Bank Policy Research Report. European Commission: United Kingdom; and AIDS Analysis Africa; 8(1): 2-3
- ⁵ Menon, R, MJ Wawer, JK Konde-Lule, NK Sewankambo, and C Li. 1998. The economic impact of adult mortality on households in Rakai district, Uganda. In M Ainsworth, L Fransen, and M Over, eds., Confronting AIDS: Evidence from the developing world: Selected background papers for the World Bank Policy Research Report. European Commission: United Kingdom
- ⁶ Demeke, M. 1993. The Potential Impact of HIV/AIDS on the Rural Sector of Ethiopia. Unpublished manuscript, January 1993.
- ⁷ Ilinigumugabo, A. 1996. The economic consequences of AIDS in Africa. African Journal of Fertility, Sexuality and Reproductive Health; 1(2):153-61.
- ⁸ Demeke, M. 1993. The Potential Impact of HIV/AIDS on the Rural Sector of Ethiopia. Unpublished manuscript, January 1993.
- ⁹ Tibaijuka, AK. 1997. AIDS and Economic Welfare in Peasant Agriculture: Case Studies from Kagabiro Village, Kagera Region, Tanzania. World Development; 25(6):963-975.
- ¹⁰ Jones, C. 1997. What HIV cost a tea estate in Malawi. AIDS Analysis Africa; 7(3): 5-7.
- ¹¹ Taylor, L, J Seeley, E Kajura. 1996. Informal care for illness in rural southwest Uganda: the central role that women play. Health Transition Review; 6(1):49-56.
- ¹² Roberts, Matthew and Bill Rau, African Workplace Profiles: Private Sector AIDS Policy, AIDSCAP, Arlington, VA, USA.
- ¹³ Roberts, Matthew and Bill Rau, African Workplace Profiles: Private Sector AIDS Policy, AIDSCAP, Arlington, VA, USA
- ¹⁴ Roberts, Matthew and Bill Rau, African Workplace Profiles: Private Sector AIDS Policy, AIDSCAP, Arlington, VA, USA.; Aventin, L and P Huard. 1997. HIV/AIDS and manufacturing in Abidjan. AIDS Analysis Africa, Vol 7(3): June 1997.; Ainsworth, Martha, "The Impact of HIV/AIDS on African Development", presented at the African Development Bank HIV/AIDS and Development in Africa Symposium, May 11, 1993.
- ¹⁵ Southern African Economist, 1997. "AIDS toll on regional economies," April 15-May 15, 1997.
- ¹⁶ Southern African Economist, 1997. "AIDS toll on regional economies," April 15-May 15, 1997.
- ¹⁷ Ainsworth, Martha, "The Impact of HIV/AIDS on African Development", presented at the African Development Bank HIV/AIDS and Development in Africa Symposium, May 11, 1993.
- ¹⁸ Southern African Economist, 1997. "AIDS toll on regional economies," April 15-May 15, 1997.
- ¹⁹ Ministry of Health, 1998. AIDS in Ethiopia, Second Edition, Addis Ababa: Epidemiology and AIDS Department, 1998.; NASCOP, 1998. AIDS in Kenya, Fourth Edition. Nairobi: National AIDS and STDs Control Programme, 1998.; Ministry of Health and Child Welfare, 1998. HIV/AIDS in Zimbabwe. Harare: National AIDS Coordination Programme, 1998.
- ²⁰ AIDS Analysis Africa, Vol. 4 (5), September/October 1994.
- ²¹ UNAIDS, 1998. Report on the global HIV/AIDS epidemic, June 1998. Geneva: UNAIDS, WHO., 1998.
- ²² Over, Mead, 1992. "The Macroeconomic impact of AIDS in Sub-Saharan Africa," The World Bank, Technical Working Paper No. 3., 1992.
- ²³ Kambou, Gerard, Shantayanan Deverajan and Mead Over. 1992. "The Economic Impact of AIDS in an African Country: Simulations with a Computable General Equilibrium Model of Cameroon", Journal of African Economies, Volume 1, Number 1.
- ²⁴ Forgy, Larry. 1993. "Mitigating AIDS: The Economic Impacts of AIDS in Zambia and Measures to Counter Them," REDSO/ESA, February 1993.
- ²⁵ Cuddington, JT, 1992. Modelling the Macroeconomic Effects of AIDS, with an Application to Tanzania, World Bank Economic Review, 7(2):172-189.

²⁶ Hancock, John; David Nalo; Monica Aoko; Roselyn Mutemi; Steven Forsythe, 1996. "The Macroeconomic Impacts of AIDS," *AIDS in Kenya*, FHI: Washington, DC, 1996.

²⁷ World Bank, 1997. *Confronting AIDS: Public Priorities in a Global Epidemic*. New York: Oxford University Press.

**"Blueprint"
For a U.S.-Africa Partnership for the 21st Century**

Senior ministers from [forty-six] African nations and the heads of six African regional organizations met with President Clinton, nine members of the Cabinet, the U.S. Trade Representative, four agency heads, and other senior U.S. officials in Washington, D.C., March 15-18, 1999, to consider the future of the U.S.-Africa Partnership in the 21st Century. At this historic, unprecedented and productive gathering, we identified opportunities for enhanced cooperation as well as important issues to address collectively through our new Partnership. This Partnership builds upon the economic initiative President Clinton announced in June 1997 and other initiatives he unveiled during his trip to Africa one year ago.

We intend to work together on the major issues connecting sub-Saharan Africa and the United States. Given the ministerial nature of these meetings, our dialogue focused on governmental actions. Yet we also took heed of the critical roles that the private sector and civil society can and must play in our countries and in our Partnership. We thus used the occasion to network with business and NGO representatives. Additionally, African participants found meetings with the U.S. Congress to be constructive and informative.

COMMON PERSPECTIVES

U.S. and African ministers share the conviction that the acceleration of Africa's integration into the global economy is in our mutual interest and will benefit the people of both the United States and Africa. They recognize that each side of the Partnership has much to offer the other. The United States has capital, technology, strong experience in international trade and investment, and the world's richest and most open market. Africa has abundant natural resources and talented, hard-working people who are nearly three times more numerous than the population of the United States. Many sub-Saharan African nations have reformed their economies in the 1990s, liberalizing trade and investment regimes and moving toward a greater reliance on the private sector. These economies performed significantly better than in the previous two decades.

African-U.S. economic ties continue to grow. For example, U.S. exports to Africa grew more rapidly in 1998 than did U.S. exports to most other regions and are now 45% greater than its exports to all countries of the former Soviet Union combined. As a source of crude oil, Africa is as important to the United States as the Persian Gulf. On a balance of payments basis, American private investment consistently produces a higher rate of return in Africa than in any other region.

Aware of the role that the market plays in the creation of wealth and the efficient allocation of resources, many African governments continue efforts to establish conditions conducive to broad-based growth and sustainable economic development, including increased and more effective investment in human and physical capital. African and U.S. participants agreed upon the importance of fiscal and monetary

discipline, creating improved conditions for private domestic and international investment, access to capital and technology, sustainable environmental practices, a healthy, well-educated citizenry, and transparent, predictable governance based on the rule of law and the consent of the governed.

Through continued technical and development assistance, and through programs that facilitate private sector growth and development, the United States is committed to helping its African partners in this vital effort. At the same time, the U.S. will endeavor to increase support for African regional integration, economic reform, democracy, good governance, and other shared objectives.

Long-term trends throughout Africa are encouraging. Many African nations are undertaking economic reforms and are making substantial progress in consolidating democracy and creating more inclusive societies. Our Partnership is committed to bolstering these positive developments where they are already in place and to nurturing the seeds of hope where turmoil has impeded their growth.

Africa is a vast and varied continent facing significant challenges as well as extraordinary opportunities. Conflicts impede economic, social, and political development, and they exact a terrible human toll. They also form breeding grounds for transnational threats such as terrorism, arms proliferation, crime syndicates, drug trafficking, and environmental degradation. If unchecked, these scourges could impede the hard-won gains of the last decade. The United States is committed to helping African nations and their regional organizations develop greater capacity to prevent and resolve conflicts. African participants welcomed the intensification of that American commitment and reaffirmed their responsibility – and determination -- to solve their own problems.

ECONOMIC PRIORITIES

Discussion covered a broad range of economic issues, identifying opportunities for deeper mutual engagement and establishing procedures to address differences. The United States explained the philosophy of the Partnership for Economic Growth and Opportunity in Africa announced by the President on June 17, 1997. U.S. officials pointed out that it is based on the premise that economic reforms pursued by African countries have been effective, that reforming countries make the best use of external assistance, and that the United States should make increasing efforts to support reforming countries. Some African participants asked that the Partnership find ways to include all African countries at each stage of the reform process, which the United States assured them was a shared objective of the Partnership.

Trade

African participants called for the rapid passage by the U.S. Congress of the African Growth and Opportunity Act, both as a vital symbol of increased U.S. engagement and as evidence of U.S. support for African efforts to grow through increased openness to

international trade and investment. Participants endorsed the premises underlying the Act, which would help integrate Africa into the global economy and build a strong commercial partnership between Africa and the United States. They noted the benefits would run in both directions. The Act would foster increased two-way trade. It would also attract investment to build African capacity to compete in the global economy, generating employment and planting the seeds for other market-based production.

The Act would also facilitate trade and investment by making the U.S. Generalized System of Preferences (GSP) more predictable. African ministers called for the expansion of the number of GSP product lines, and the United States noted that it recently added some 1800 products under the GSP umbrella for Least Developed Countries, 29 of which are in Africa. Last year the United States announced GSP cumulation benefits for eligible members of SADC, WAEMU, and the EAC. African participants asked the United States to continue to expand programs (such as existing USAID-sponsored GSP seminars in Africa) that increase African understanding of U.S. market access requirements.

The United States noted the progress many African countries have made in ensuring eased market access for foreign business enterprises and encouraged further liberalization of the business climate. The Department of Commerce Foreign Commercial Service will expand its country coverage to further assist U.S. businesses interested in Africa.

African participants also called for the United States to continue to increase technical assistance to Africa's public and private sectors to promote Africa's integration into the global economy and the system of WTO rules. They asked the United States to support OAU participation in the WTO. The United States encouraged African governments to play a more active role in the WTO, and it has asked the Chairman of the WTO's General Council, Ambassador Ali Said Mchumo of Tanzania, to undertake consultations to address the observer issue. African and U.S. representatives agreed to establish a mechanism for regular consultations on WTO and related matters, in Geneva and Washington as preparation for the WTO Ministerial advances.

Investment

African ministers agreed to continue improving investment conditions and to market their countries more effectively. The United States, in turn, will seek more vigorously to encourage U.S. business to explore opportunities in Africa. This would stimulate employment in the countries of investment as well as in the United States, as American firms service those investments and increase their trade with Africa's growing economies.

The United States noted programs already contributing to this effort, starting with the Overseas Private Investment Corporation. OPIC is currently providing nearly \$1 billion in insurance and financing to 50 projects in 20 sub-Saharan countries. To facilitate its work it has executed new bilateral investment agreements with 12 sub-Saharan countries just since the President announced his economic Partnership initiative in 1997. Later that

year OPIC launched a \$120 million New Africa Opportunity Fund for Southern Africa and a \$150 million Modern Africa Growth and Investment Fund. It will also support one or more new private equity funds with aggregate capital of up to \$500 million to be invested in privately sponsored infrastructure projects in sub-Saharan Africa.

The United States affirmed its interest in negotiating Bilateral Investment Treaties and Trade and Investment Framework Agreements with additional African nations and regional organizations. Participants identified opportunities for expanded cooperation in agribusiness and energy, and African ministers requested investment in those and other core sectors -- such as industry, mining, tourism, telecommunications, transportation, and education -- that would have a major impact on their economies. They took advantage of a networking luncheon this week to discuss these priorities with American business representatives. The United States noted the investment guides it prepares on an annual basis for each African country and the help it has given a number of African countries in producing investor roadmaps. It also noted USAID's new Africa Trade and Investment Policy program developed under the Partnership. This program helps the strongest-reforming African governments and regional organizations improve the legal and regulatory environment for trade and investment activities. African ministers expressed appreciation for these programs and asked for expanded American collaboration with African agencies that facilitate new investment.

Finance

African and U.S. participants also discussed developments in international capital markets, current volatility in those markets, and ways in which African governments can best take advantage of international markets while safeguarding their economies from risks inherent in financial integration.

Most sub-Saharan African nations remain heavily reliant on flows of external financial support. Participants noted that the international financial institutions continued to be a major source of such support in 1998. The World Bank and African Development Bank provided over \$5.4 billion of loans, investments, and grants to sub-Saharan Africa in that year, while the IMF has about \$3 billion of commitments outstanding under current arrangements. The great majority of this funding is on highly concessional terms: new World Bank commitments to Africa under IDA represented about 35% of its global commitments of \$7.1 billion in 1998 -- the largest of any geographic region.

The United States reiterated its commitment to continued support for substantial programming by the international financial institutions in reforming sub-Saharan countries. The recent record demonstrates the strength of resolve in this respect, including a pledge of \$800 million for the IDA-12 replenishment, making the United States the largest donor. Also, the United States maintained its position as the largest donor in the replenishment of the African Development Fund, and it supported a \$7 billion capital increase for the African Development Bank, in which the United States is the largest non-African shareholder. The U.S. Administration has requested in its current

budget a \$50 million contribution to the trust fund for Heavily Indebted Poor Countries (HIPC).

U.S. officials also described programs designed to support access by both American and African businesses to private equity and other forms of financing for ventures in Africa, including through the Overseas Private Investment Corporation, the Export-Import Bank, and the Trade and Development Agency.

Participants also noted the critical importance of ensuring that domestic as well as international financing programs take sufficient account of the micro-enterprise sector. They agreed on the value of micro-enterprise programs in stimulating the indigenous private sector and broad-based growth. The Peace Corps, African Development Foundation, and USAID are already engaged in this effort, as are African and American NGOS. The United States will seek to increase support for these programs, and African governments will seek to increase access to private credit and entrepreneurial opportunities for small investors, especially women.

Debt

All agreed that excessive debt burdens impede development and the transfer of new resources to countries in great need. The United States outlined its policy approach of providing relief -- in concert with other major donors and the international financial institutions -- to governments that have taken steps to put their economies on a sound footing. They noted the general consensus that economic reform by debtor countries themselves is the primary means by which countries in Africa will grow and sustain debt burdens in the future.

African ministers expressed appreciation for the relief provided but asked for the cancellation of all bilateral debt. They also requested U.S. support for the cancellation of all African debt to international financial institutions. The United States recalled that it was an early and strong advocate of the HIPC debt initiative, with the objective of achieving sustainable debt levels for the most heavily debt-burdened countries within a framework of economic reform. U.S. officials reported that to date, almost \$6 billion in debt service relief has been committed by all creditors, including the multilateral institutions, to the seven countries already eligible, of which five are in Africa. It is anticipated that that up to 20 countries, most of them in Africa, will become eligible for HIPC debt relief.

As to the immediate future, the United States explained that it expects to participate with other creditors during 1999-2000, through the Paris Club, in further debt relief for African countries totaling \$2.9 billion. Having already forgiven \$1.1 billion of bilateral concessional debt owed by sub-Saharan countries in the early '90s, the United States will forgive additional such debt owed by strong-reforming African countries under the Partnership for Growth and Economic Opportunity. During 1999-2000, this could

amount to over \$400 million of concessional debt owed by six African countries, complementing Paris Club and HIPC debt relief.

Ministers underscored the need to provide new financing to eligible countries in a manner which eases rather than exacerbates debt burdens. The United States reported that since 1985, it has provided new bilateral financing, primarily in the form of grants, to the poorest African countries to help keep their debt burdens manageable – with grants totaling almost \$12 billion for the most heavily indebted sub-Saharan countries. Ministers joined the United States in its consistent and forceful call to other donor countries that they adopt the same practice to help avoid the recurrence of excessive debt burdens in the future. In conclusion, the United States and African nations agreed to continue substantive consultations on Africa's debt burden in appropriate fora.

Infrastructure

Participants recognized the critical role of infrastructure, particularly transportation and telecommunications networks, in supporting Africa's economic growth, facilitating national and regional integration, and expanding trade regionally as well as globally. Poor transportation infrastructure continues to be one of the greatest barriers to Africa's development, and currently Africa's roads, ports, and airports are not capable of efficiently handling increased international trade flows. The competitive advantages that Africa enjoys in terms of human and natural resources are severely diminished by the inefficiency of its transportation systems.

Participants agreed to work more closely together to identify Africa's transportation corridors that are needed to support regional and international trade. African participants asked that donors give priority to such regional projects as the SADC Development Corridors and the East Africa regional road and communications networks. They expressed appreciation for the Safe Skies for Africa initiative, which seeks to quadruple the number of African countries that meet ICAO standards for safety oversight and to improve airport security and air navigation services in Africa. They recognized that improving safety and security opens the door for expanded air service, and that air service means more opportunity for trade and tourism – two powerful engines for the economic growth of African nations. Participants also acknowledged other U.S. transportation and communications projects, including the Federal Highway Administration's technology transfer centers.

U.S. agencies agreed to expand their engagement with African countries and regional organizations in an effort to improve African air, surface, and maritime transportation, as well as communications infrastructure, through technical assistance and OPIC support for private investment in these areas.

Energy

The need for sustainable supplies of energy to support basic human needs and aspirations is widely recognized as a critical component of development. Efficient energy systems are a key element of economic growth, productivity increases, international competitiveness, and environmental improvements. Competitive energy markets promote efficiency, lower costs, including to consumers, and a higher level of national welfare. Energy also plays a key role in international competition and the ability of a country to attract private investment. Policy and regulatory measures in support of competitive, open markets that facilitate free trade and investment in energy are recognized as an important component of critical infrastructure development. A strong, competitive energy sector can support growth and sustainable development in many other areas.

Development Assistance

All U.S. and African participants agreed that development assistance remains an essential component of the effort to promote sustainable growth and alleviate poverty in Africa. Some participants noted recent research demonstrating that foreign assistance is most effective when provided to countries pursuing the strongest reforms. All agreed that it is essential to orient a component of current development assistance to support reforms now underway in order to elicit the trade, investment, and entrepreneurial responses needed to provide Africans more widespread and lasting opportunities to improve their standard of living.

African participants expressed deep appreciation for U.S. humanitarian assistance, which has saved millions of lives, as well as for assistance that addresses long-term development; for example, the African Food Security Initiative and other programs that support a broad range of agricultural training and cooperative extension. It was noted that U.S. assistance comes in many forms and through many actors such as USAID, the Peace Corps, the African Development Foundation, NGOs, and international organizations to which the U.S. is a major, often the leading, contributor; for example, UNDP, UNICEF, WFP, UNHCR, the IMF, the World Bank, including IDA, and the African Development Bank and Fund.

African ministers expressed great appreciation for the pledge President Clinton made during his trip to Africa last year to work with Congress to restore development assistance for Africa to historic high levels. As reflected in his budget requests for fiscal years 1999 and 2000, the Administration is following through on that commitment, with a focus on those countries where the policy environment is conducive to development.

Of course, the nature of assistance and how it is used are every bit as important as the level of funds. U.S. and African participants agreed to consult closely on African national priorities, and they noted the particular importance of developing human capital.

Human Capital

African and U.S. participants shared ideas on how to enhance development of Africa's human capital and institutional capacity. They agreed that increasing literacy and numeracy by improving the quality of and access to basic education is the foremost area to address. They also agreed that globalization and technological innovation demand a transformation in educational approaches. The United States described new technologies and strategic partnerships between African and U.S. universities, schools, and civic education institutions envisioned by President Clinton when he announced his Education Initiative. Africans welcomed that initiative and urged its speedy implementation. They also asked the United States to support Africa's research and development programs, including with information technology. African and U.S. participants agreed on the importance of a policy environment that will encourage the transfer, development, and application of appropriate technology, and the United States agreed to look into increasing assistance in this area, which is already substantial through the Leland Initiative.

African participants shared success stories and facilitated discussions on effective means of exploiting the telecommunications revolution, assisting small entrepreneurs, and slowing the transmission of infectious disease, especially HIV/AIDS. USAID highlighted its existing programs for accelerating response and utilizing strategic focus in African countries severely affected by HIV/AIDS.

Regional Integration

African participants stressed that regional groupings enhance African influence in the international arena and asked the United States to support such organizations as SADC, EAC, WAEMU, ECOWAS, COMESA, ECCAS, IGAD, and the IOC. Participants agreed that economic integration within Africa can improve economies of scale and reduce transaction costs for its own citizens as well as international business. They also agreed that African regional organizations can help resolve conflicts, as ECOMOG has done, for example, in Liberia and Sierra Leone. In that regard, the United States pointed to the assistance it has provided regional organizations, such as ECOMOG and the OAU crisis management unit, as well as its technical assistance for economic integration, particularly for SADC but also for EAC, IGAD, and COMESA. The United States is interested in extending that support to other regional groupings and agreed to look for additional ways to bolster regional integration in Africa, including encouragement for creative approaches by the international financial institutions. In the meantime it is coordinating closely with its SADC partners to ensure that the first-ever U.S.-SADC forum is a success. It encourages member states in SADC and EAC to ratify instruments that will make them eligible for GSP cumulation, as it encourages other African subregional organizations to take the trade-liberalizing steps that would make their members also eligible for such benefits.

ADDITIONAL PRIORITIES

Transnational Threats

Participants undertook to enhance cooperation in combating such transnational security threats as crime, narcotics, terrorism, and arms proliferation. All expressed strong support for the West African small arms moratorium. The United States and African participants expressed their mutual commitment to expand and build on existing cooperation to address transnational threats. The United States reiterated its sincere thanks for the cooperation it has received from African governments in the aftermath of the bombings of its Embassies in Tanzania and Kenya to ensure the mutual safety of all our citizens.

African participants urged the United States to ratify the Convention to Combat Desertification. They and the United States re-committed to working with each other to fight crime and disease and to ensure environmentally sound development.

Governance, Human Rights and Conflict Resolution

African and American representatives reaffirmed their commitment to promote democracy and respect for worker and human rights, as well as to prevent and resolve conflicts.

Participants recognized the obligation borne by public institutions, notably including budget ministries and central banks, to be transparent and accountable in their handling of public funds. To this end, participants noted their interest in following current standards of public accountability, including the IMF's Code of Good Practices on Fiscal Transparency. The United States, for its part, agreed to support technical assistance, both bilaterally and multilaterally via the international financial institutions, to enable African governments to meet these standards. Participants agreed on the need to adopt a binding African anti-corruption convention along the lines that the Global Coalition for Africa is formulating.

There was also general agreement on the need for greater international cooperation to strengthen the rule of law and democratic institutions. African participants shared lessons learned and success stories on how to implement strong reforms in these areas. They welcomed the Great Lakes Justice Initiative, which seeks to break cycles of violence by building credible, impartial justice systems and by bolstering ethnic reconciliation at the grassroots level. Another U.S. initiative in this field is Radio Democracy for Africa, which will work with African and American media to disseminate news responsibly through the region.

Participants unanimously agreed that violent conflict poses the greatest threat to African reform efforts. They further noted that, while essential security needs must be addressed, it also is essential that military expenditure burdens not be allowed to divert scarce

resources from vital social and developmental programs. Conflict saps resources and destabilizes countries and regions, scaring off potential investors. Participants further agreed that the enabling environment necessary for political and economic reform requires stability derived from strong mechanisms that prevent or mitigate violent conflict and its profound and lasting effects. They agreed that the OAU crisis management unit could serve as one such mechanism, but stressed that carefully planned support for increasing its capacity was essential. Many of the participants cited ECOMOG's contributions towards mitigating increased violence in the subregion, as well as collaborative efforts to build peacekeeping capacity, such as the United States' African Crisis Response Initiative. The United States and Africa agreed to work together to establish the U.S.-funded African Center for Security Studies and to look for a permanent location for the Center as a means to foster increased military professionalism and civil-military cooperation.

In sum, the United States and its African partners firmly committed to maximize their diplomatic efforts and cooperation on conflict prevention and resolution, a critical component of the growing U.S.- Africa Partnership.

One Step, One Journey

U.S. and African participants found the Ministerial meeting to be extraordinarily useful in establishing a framework for U.S. -African partnership on issues of mutual interest in the 21st Century. They undertook to advance their mutual commitment to work together for the benefit of all concerned. In this vein they noted the importance of institutionalizing an U.S.-Africa dialogue on issues of common concern and agreed to explore means of ensuring that consultations continue.

###



Public Health as Part of the Strategy of African Economic Growth

Professor Jeffrey Sachs¹

Harvard Institute for International Development

March 10, 1999

¹Jeffrey D. Sachs is the Director of the Harvard Institute for International Development, the Center for International Development at Harvard University, and the Galen L. Stone Professor of International Trade at Harvard University. This report was prepared for a meeting of African ministers in Washington, D.C., March 17-18, 1999.

Public Health as Part of the Strategy of African Economic Growth

Every finance minister in Africa knows that Africa's poverty makes it difficult to attend to the health of the population. Budgets are scarce, doctors are few; and health systems are strained by the constant fiscal crisis facing every country on the continent. Fewer ministers and development specialists fully appreciate the converse proposition: that Africa's poor health is a fundamental obstacle to economic development. Both formal statistical analysis and detailed case studies demonstrate that poor health is as much a *cause* as an effect of poverty. A frontal attack on poor Africa's health status may now be the most important single strategy for economic development for the continent.

Healthy populations contribute to economic development in several ways, including:

- higher individual productivity
- greater investments in human capital by healthy individuals
- reduced losses of work time and schooling due to illness
- longer life expectancy, allowing a greater accumulation of work skills and expertise
- easier interface with the world economy through increased trade, travel, and investments

Africa's health situation is nothing short of alarming. At the top of the crisis list, of course, is HIV/AIDS, which according to UNAIDS now affects an estimated 22.5 million Africans, and which took 2 million lives last year. As described in the accompanying paper, AIDS is particularly pernicious, hitting educated, mobile, prime-age workers. War and displacement are a second fundamental feature of the continuing health crisis. The third category includes a host of infectious diseases, ranging from respiratory diseases to vector-borne diseases such as malaria and schistosomiasis. As discussed below, one feature of the African health scene is the paucity of data to make even rudimentary estimates of the extent and economic burden of these various public health crises.

The Macroeconomic Evidence on Health and Economic Growth

Africa's health crisis would be worthy of dire concern even if it had no further repercussions on African economic performance. Alas, the evidence suggests that poor health is not only a direct social burden, but also a major cause of slow economic growth. This section discusses the macroeconomic analysis that demonstrates the linkage from health to economic growth.

In recent years economists have sought to uncover the basic determinants of success and failure in macroeconomic performance, most importantly the success or failure in achieving sustained economic growth. According to economic theory and to empirical studies, there are several basic factors that help to explain why some countries and regions have sustained rapid growth and others have not:

(1) physical geography. Countries that are landlocked, or that are remote from world markets,

generally have a harder time achieving export-led growth than coastal economies and economies close to major world markets. While there are exceptions to this proposition, the overall tendency is very clear in the data;

(2) trade policy. Countries that are closed to international trade have consistently grown more slowly than countries that are open to international trade. For these purposes, openness is characterized by: a convertible currency; low tariffs; low quota protection on imported goods; and low barriers to export;

(3) fiscal policy. Countries that run large budget deficits grow less rapidly than countries that run small budget deficits or budget surpluses. Large budget deficits tend to lower national saving rates (and hence national investment rates), and to cause macroeconomic destabilization;

(4) quality of governance. Countries that are characterized by the rule of law, low levels of corruption, a rule-abiding civil service, and protection of physical and intellectual property rights, tend to grow more rapidly than countries which lack one or more of these attributes;

(5) demographic change. Economists describe the “dependency ratio” as the proportion of the population under the age of 15 or over the age of 65. Countries with a consistently high dependency ratio tend to grow less rapidly in per capita terms than countries with a consistently lower dependency ratio. In simplest terms, the gross domestic product is produced mainly by working-age individuals. When the share of such individuals rises, gross domestic product tends to rise relative to the overall population.

(6) public health. Countries with low levels of life expectancy tend to grow more slowly than countries with a long life expectancy, holding constant all of the other factors of economic growth. Thus, if there are two countries with identical geography, economic policy, and demographic change (dependency ratios), but one has a longer life expectancy than the other, the country with the longer-lived population tends to grow more rapidly.

(7) initial income. Countries with a low level of income -- holding constant all of the other factors -- tend to grow more rapidly than countries with a high level of income. This “convergence” property reflects the ability of poorer countries to achieve “catch-up” growth with the richer countries through the importation of technology, capital, and ideas. Of course, many poor countries do not grow rapidly, but this is the result of other problems facing the economy (such as poor geography, poor economic policies, poor public health, etc.).

In a recent study, my colleague David Bloom and I (Bloom and Sachs, 1998) tried to determine the causes of Africa’s poor economic growth. We looked at the growth of GDP per working-age population during the period 1965-90. Over those years, Africa grew 3.6 percentage points per year less rapidly than East Asia, 0.4 percentage points less rapidly than Latin America (which had its own growth crisis), and 1.7 percentage points less rapidly than the average of all non-African developing countries. Since Africa started out poorer than these other regions, we might have expected Africa to grow faster, because of the forces of “convergence.”

Instead, Africa grew more slowly. What were the relative factors behind that shortfall in growth?

Using a statistical model linking economic growth to factors listed above, we created a quantitative allocation of Africa's growth shortfall according to the various factors. While details must be found in the original paper (Table 7, p. 261), we reproduce the basic table here and give a summary account of the finding (table 1). If we compare Africa with East Asia for example (the first two columns of the table), we find that Geography, demography, and health account for 73 percent of the overall shortfall in African growth, or 3.23 percentage points per year. The two biggest factors are demographic change (listed in the table as "difference in population growth") and life expectancy in 1965. The demographic factor accounts for 1.14 percentage points per year of the growth shortfall, while the life expectancy variable accounts for 1.19 percentage points per year.

The demographic (population) variable reflects the fact that Asia benefited from a "demographic transition" while Africa did not. By the 1960s and 1970s in Asia, women had begun to have many fewer children. (Technically, the Total Fertility Rate, or TFR, went down). As a result, there were fewer children born in Asia per adult population, and the dependency ratio declined. This provided a boost to GDP per capita. In Africa, by contrast, the TFR remained very high throughout the 1970s and 1980s, and as a result, Africa's youth dependency ratio remained very high.

The life expectancy variable reflects the fact that African life expectancy in 1965 averaged around 42.6 years, while life expectancy at birth in Asia in 1965 averaged around 58.7 years (these are unweighted averages across countries in the respective regions). This difference in life expectancies, according to the statistical evidence, accounts for more than 1 percentage point of annual economic growth!

If one looks at the rest of the table, there are two major findings that are worthy of emphasis. First, the "geography, demography, and health" variables explain most of Africa's growth shortfall with respect to each counterpart group (Asia, Latin America, Non-Africa). Thus, the reasons for Africa's poor growth apparently have more to do with Africa's geography, population dynamics and public health than with economic policy and governance. This is not the usual view of the matter in official discussions. Second, economic policy does matter, but has explained less than half of the shortfall in African performance. The major source of policy problem, it seems clear from the data, has been Africa's relative closure to international trade. Africa remained a closed economy (through high tariffs and licenses, currency inconvertibility, export monopolies which depressed export growth, and other barriers to trade) at a time when other parts of the developing world were benefiting from rapid export-led growth. Thus, export industries such as apparel, textiles, and electronics assembly, which could have come to Africa, instead went to East Asia and the Caribbean, thus limiting Africa's chances for export-led growth.

The gap in life expectancy between Africa and the rest of the world accounts for a great deal of the growth shortfall, but we still lack a deep understanding of the precise channels by which one affects the other. As mentioned earlier, low life expectancy and related higher disease-

associated morbidity imposes direct costs on productivity (less time in the workplace, lower work capacity, higher medical costs) as well as indirect costs (lower accumulation of skills, lower investments in education because of a shorter life span, and so on), each of which contributes to the shortfall in growth. Also, bad health imposes a direct burden on foreign investment and international travel, as Africa is avoided for foreign investments because of fears of greater disease burdens. Much serious research work remains to test these various channels for their practical importance.

Unfortunately, the gap in life expectancy between Africa remains large, and is actually increasing once again because of the AIDS epidemic. As discussed in an accompanying paper, the economic growth implications of HIV/AIDS are serious. As of 1996, Sub-Saharan Africa's life expectancy at birth was 51 for males and 54 for females, compared with 67 for males and 70 for females in the low and middle income countries of East Asia and the Pacific. This gap in life expectancy, of 16 years, would account for around 1.1 percentage points in economic growth per year using the same statistical model as was used to make Table 1. Thus, the health burden remains huge. Africa's life expectancy is a decade lower than in South Asia (which is 61 for males, 63 for females).

There is considerable debate and uncertainty, of course, about the reasons for Africa's particularly poor health status. It is partly a result of poverty. It is also, no doubt, partly a result of specific failures of public health systems to use existing technologies to best advantage. Many deaths in Africa are due to easily treatable diseases, but these cases go unattended because of ignorance, lack of supplies, breakdowns of local health systems, and so on. Part of the disease burden, however, is a result of Africa's special geographical and ecological conditions. As a tropical region, Africa has a special burden of infectious diseases that thrive in the tropics and that are easily controlled in the temperate climates. Moreover, some of these diseases, as well as the vectors which transmit them, may have coevolved with humankind in Africa, and are therefore even more difficult to control in Africa than in other tropical regions, to which they were imported more recently. Also, many parts of Africa face severe limitations on agricultural productivity. As a result of the widespread malnutrition in communities which face these limitations, diseases take a much higher toll in terms of morbidity and mortality.

The tropical burden in African Health: the example of malaria

This short note can't go into the details of tropical disease ecology in any depth. Instead, it is illuminating to illustrate the general problem by focusing on one disease, *malaria*, which is the vector-borne disease with the greatest prevalence and highest disease burden in the tropical world. It is also a disease that hits Africa especially hard. Sub-Saharan Africa has an estimated 90 percent of the world's clinical malaria cases each. Nobody knows for sure, however, since the record keeping and data systems for malaria in Africa and other tropical regions are notoriously deficient.

Because of the underlying biology of the disease -- in particular, the way in which malaria is transmitted by *Anopheles* mosquitoes, which require warm temperatures to be effective vectors of the disease -- malaria tends to be holoendemic (or "stably transmitted") in perennially hot

climates; epidemic (or “unstably transmitted”) in seasonally warm but not hot climates such as the subtropics or lower tropical highlands, and absent in cool climates (such as above the 2000m level in the tropics, or in most temperate zones). This crucial ecological point helps to explain the critical facts of Figure 1, which describe the prevalence of malaria in three years of observation, 1946, 1966, and 1996, based on maps of the World Health Organization. In 1946, malaria extended to many sub-tropical regions, such as Southern Spain and Italy, the Levant, and Central Asia. The U.S. Government and the World Health Organization spearheaded a global eradication campaign, with various phases, during the 1960s and 1970s. The campaign an “attack phase” during which indoor DDT spraying was designed to kill recently blood-fed mosquitoes before they became infective, followed by a “consolidation phase,” which involved intensified case management for infected individuals. The campaign was a failure relative to its initial bold goal of malaria eradication, but as the figure shows clearly, it did succeed in a limited range of areas, mainly the areas of the sub-tropics where malaria was still prevalent in 1946, such as Southern Europe. Other regions where malaria was successfully controlled included Hong Kong, Singapore, and Mauritius (which were greatly advantaged by their island geography), and parts of Malaysia, where mosquito prevalence was easier to control for other reasons. It is important to note that Africa was excluded from this program, with the exceptions of South Africa, Lesotho, and Mauritius, which were among the last countries in the world to be permitted to join.

The lesson of Figure 1 is quite dramatic. Malaria was controlled in the sub-tropics rather than the tropics. *The failure of Africa to control the disease is not mainly the result of poor public health measures, or unresponsive governments, or the poverty of Africa, but rather of the natural environment.* Actually, Africa's malaria problem is the world's worst for additional ecological reasons. It turns out that *Anopheles gambiae* is indigenous to Sub-Saharan Africa, and is observed only focally in those few tropical regions outside of Africa where it has been imported. For a variety of species-specific reasons, *Anopheles gambiae* is by far the most competent vector of falciparum malaria.

Sachs and Gallup (1998) have found in cross-country growth regressions that falciparum malaria is associated with a substantial reduction in annual GDP growth, perhaps of more than one percentage point per year, even after controlling for other standard variables. We surmise that these high costs of malaria come not only through the direct effects (lost work time, lower worker productivity) but also by raising barriers against technical diffusion and foreign investment into endemic malarial regions. Historical accounts of Africa's interactions with the rest of the world in the past 500 years repeatedly stress that malaria was a major barrier, perhaps the major barrier, to Africa's normal integration into the world economy. Malaria continues to present serious obstacles to foreign investment and tourism in many parts of Africa. Foreign businessmen lack the partial immunity to malaria acquired by African adults who have experienced repeated bouts of the disease since early childhood. Prevention via existing medicines is imperfect, and not feasible for prolonged stays beyond a few weeks. Similarly, malaria presents an obstacle to Africans traveling abroad for a prolonged stay, since the acquired immunity of adult Africans who have been exposed to malaria since infancy is quickly lost in the absence of chronic re-infection. There may be other indirect costs of malaria endemicity. For example, among the clinical outcomes attendant on chronic malaria infection are lung and kidney problems, impaired motor function, and iron deficiency anemia. Such syndromes and diseases are detrimental to the

economic potential of the communities in which they occur.

A New Focus on African Health and Development

In the past twenty years, African economic development has focussed almost entirely on issues of economic policy (such as opening the economy, budget deficit reduction, and improved governance), rather than on issues of poor public health and other geographical barriers to development. Of course, these other issues have not been completely neglected, but they have been overshadowed by the economic reform agenda during the era of structural adjustment programs. It is time to restore a balance to the vision of Africa's development strategy, by putting due weight -- that is, increased emphasis -- on issues of tropical public health, care of the natural environment, and improved agricultural productivity through scientific research. This would be true even if Africa were not now succumbing to an HIV/AIDS epidemic that is unrivaled in modern history in its destructive force. But in view of that epidemic, the case for shifting our attention to critical issues of public health is of course even greater.

We have explained one of the major reasons why finance ministers, economy ministers, and trade ministers need to care about the health crisis. Improving public health is a basic part of the economic strategy, not just the social strategy. Finance ministers need to understand health issues in order to allocate domestic and foreign aid resources appropriately in national spending. Economy ministers need to work closely with public health colleagues to formulate a health strategy as part of the overall development strategy. And trade ministers need to understand that poor public health, including high prevalence of malaria, HIV/AIDS, and even tainted blood supplies used for transfusions, pose major barriers to attracting foreign direct investment and export diversification.

A companion paper discusses some of the options for improving public health systems in Africa. Without duplicating that material, I should like to close with a strong plea to policy makers in Africa and the United States. Public health challenges in Africa tend to have two characteristics that are very different from many other development issues. *First, advances will require an improved base of science and technology.* The barriers to overcoming malaria, for example, are more a question of science (e.g. the availability of an effective vaccine) than of governance (e.g. the functioning of local health clinics). *Second, advances will require regional cooperation rather than simply national programs.* This is obviously true of scientific advances (we don't need separate national vaccines!), but also true of many crucial public health interventions, such as HIV/AIDS control, since diseases like HIV/AIDS are spread especially through travel and cross-border migrations. Thus, as we design appropriate policies to address African public health, special attention needs to be put on international and regional programs, in contrast to the usual approach of country-level programs.

Underlying all of these considerations is the dearth of reliable data regarding health issues of special interest to Africa. For example, data on the incidence of tropical diseases such as malaria or schistosomiasis rely on rough approximations. There are no virtually long-term, longitudinal studies on the interactions between diseases and nutritional status, for example, or on

the social and community impact of long-term disease exposure. Such information is essential to inform effective development policies for the future. African governments together with multilateral organizations like the WHO, UNDP, and the World Bank must encourage such long-term data collection and research, and should sponsor the efforts of African and international scientists, clinicians, and epidemiologists. Today, health issues pose enormous obstacles to African growth, but often some of the most fundamental issues are barely understood.

As for spurring the needed scientific advances, we will need to think in innovative ways. Almost all scientific advances in biotechnology in recent years, whether in pharmaceuticals or in agricultural production, have involved joint actions of the public and the private sectors. Africa's health challenges must engage not only the research laboratories of national governments, but also the world's major pharmaceutical companies. Yet those companies have almost wholly neglected Africa in recent years (with notable exceptions, such as Merck's development and promotion of Ivermectin, to cure onchocerciasis), mainly because they perceive the market to be too small and far too risky to engage in expensive, long-term research and development. Even if they succeed in developing a malaria vaccine, for example, an initiative that would cost several hundred million dollars at least in risky R&D expenditures, they believe that they would reap precious few commercial benefits at the end.

The result is painfully clear. Malaria vaccine research is currently carried out mainly in government research institutes, all suffering from under-funding and hugely competing claims on scarce budgets. The Wellcome Trust estimated recently that the worldwide total malaria vaccine research effort amounted to around \$60 million, or perhaps \$65 per annual case fatality due to the disease. This compares, for example, with annual research funding of around \$140 million for asthma, a disease which is common in the "rich" temperate zones, amounting to around \$790 annual spending per fatality. In short, the 2.4 billion people in the tropics that are vulnerable to malaria provoke remarkably little research effort on their behalf, since the "market demand" is so extremely weak.

We need a dramatic new approach in such cases, using new and creative ways to link market incentives with social goals. In the case of malaria, for example, the key action is to create incentives for private pharmaceutical companies and biotechnology firms to invest heavily in a malaria vaccine. Several researchers at Harvard and MIT are examining the possibility that foreign aid funds be used to *guarantee a market for malaria vaccine at the end of the vaccine development process*. The leading governments would pledge today that they will purchase, for mass distribution, an effective malaria vaccine whenever such a vaccine is successfully developed. For example, the U.S., Europe, and Japan, on behalf of the World Health Organization, would pledge that they will form the relevant market for buying the vaccine. These governments could establish a Malaria Vaccine Trust Fund, capitalized with the needed funding, to prove that they stand ready to "make the market" when and if an effective vaccine arrives.

No money would be expended until an effective vaccine is proved. No large bureaucracy would choose among scientific approaches, or would subsidize research. No government agency would decide in advance who is worthy to lead the anti-malaria campaign. We believe in the urgent need for a decentralized approach, in which the smallest to the largest private

biotechnology and pharmaceutical companies are energized in the search for an effective virus. Market forces, rather than unwieldy public agencies, would be harnessed to tackle the key steps in vaccine development.

We can even put a little flesh on the proposal, though very speculative and rudimentary. Suppose that the leading governments commit to purchase enough vaccine to immunize all of the newborn children in Africa each year. There are, throughout the region, around 25 million births per year. A very rough estimate of the starting price for an effective vaccine, based on comparable cases for other diseases, might be around \$40. A price in this range would likely be enough to cover development costs plus the marginal costs of vaccine production and distribution. In effect, the Trust Fund would be guaranteeing a market of around \$1 billion per year to immunize all of Africa's newborns (\$25 per case times 25 million regimens per year). A global Malaria Vaccine Board, under the auspices of the World Health Organization, would administer the fund, confirming for example the efficacy of all vaccines purchased by the Fund. Would such an effort be worth it? Almost surely. Foreign aid to Africa now totals around \$16 billion per year, so a \$1 billion per year anti-malaria vaccine effort would amount to around 6 percent of total aid, and would be spent only when an effective vaccine is actually developed.

This is just one example of the kind of thinking that will be needed to push forward a major initiative on African health. This new focus will require partnerships all around -- between the U.S. and Africa, among African government, between Finance Ministers and Health Ministers, and between governments and international agencies. The effort will be strongly repaid, not only in a healthy population but also in accelerated economic development.

Table 1. Explaining Africa's Growth Gap

Geography, Demography, and Health	East/SE Asia		Latin America		World	
	Gap	Impact	Gap	Impact	Gap	Impact
Portion land area in geographical tropics	7%	-0.30	7%	-0.16	16%	-0.57
Log population density w/100km coast	14%	-0.61	9%	-0.19	8%	-0.31
Log population density inland	0%	0.01	3%	-0.06	0%	0.00
gpopdiff ^a	26%	-1.14	33%	-0.72	19%	-0.68
Log of life expectancy at birth, 1965	27%	-1.19	52%	-1.12	35%	-1.26
<i>Sub-total</i>	<i>73%</i>	<i>-3.23</i>	<i>103%</i>	<i>-2.24</i>	<i>78%</i>	<i>-2.82</i>
Economic Policy and Governance						
Trade openness	32%	-1.40	13%	-0.27	24%	-0.89
Quality of government institutions ^b	5%	-0.22	-1%	0.02	5%	-0.20
Central government budget deficit ^c	1%	-0.03	-9%	0.20	-7%	0.25
<i>Sub-total</i>	<i>37%</i>	<i>-1.65</i>	<i>2%</i>	<i>-0.05</i>	<i>23%</i>	<i>-0.84</i>
<i>Total Gap explained</i>	<i>110%</i>		<i>105%</i>		<i>101%</i>	

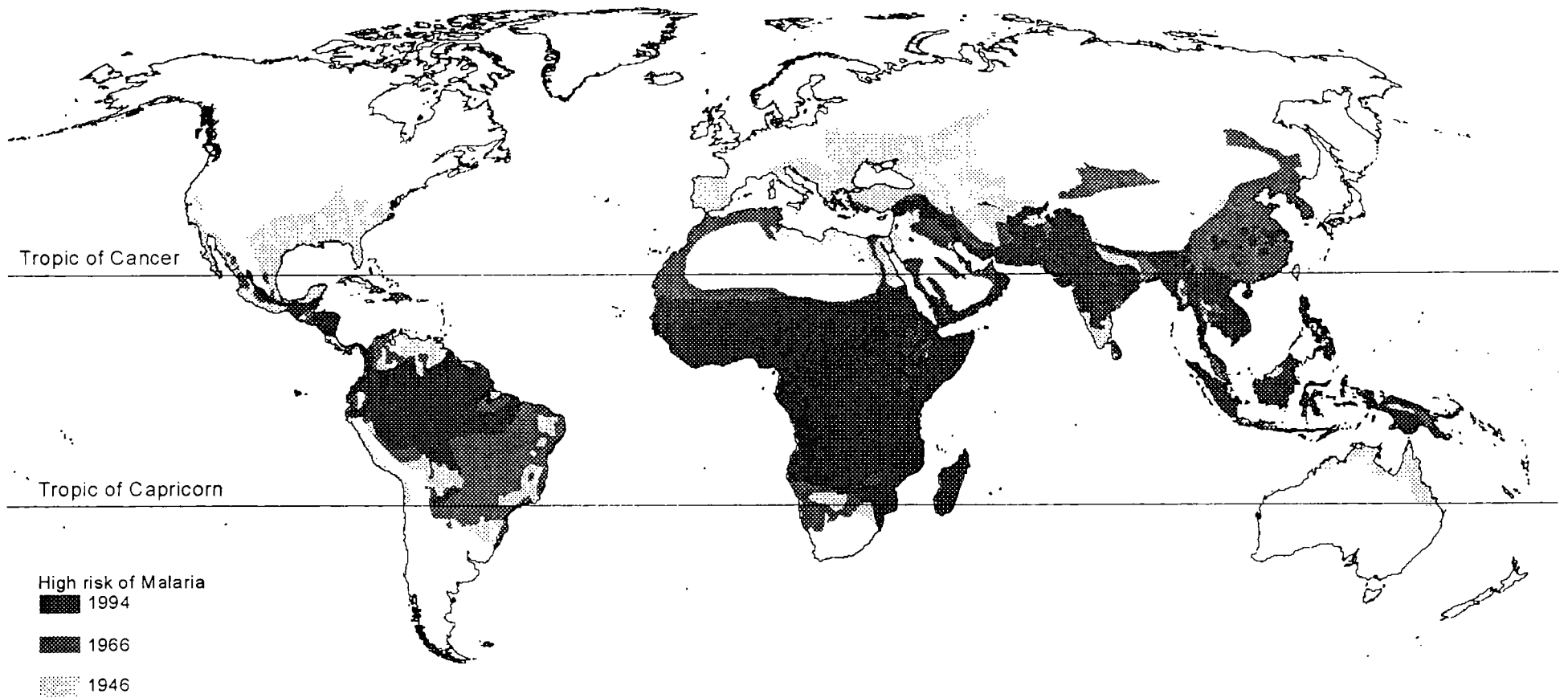
Notes: The observed growth gaps were: Africa-East/Southeast Asia: -3.6%, Africa-Latin America: -0.38%, Africa-Non-Africa: -1.7%. These gaps were then adjusted to reflect differences in the expected rate of convergence. Since Africa is the relatively poorer region, this adjustment "widened" the effective gaps to: Africa-East/Southeast Asia: -4.4%, Africa-Latin America: -2.2%, Africa-Non-Africa: -3.6%.

a Difference of average growth rate of working-age population, 1965-1990 and average growth rate of total population over the same period.

b Unweighted average of 5 sub-indices developed from data by Political Risk Services, measuring the following. The *rule of law index* "reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes" The *bureaucratic quality index* measures "autonomy from political pressure", and "strength and expertise to govern without drastic changes in policy or interruptions in government services." The *corruption in government index* measures whether "illegal payments are generally expected throughout... government", in the form of "bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans." The *risk of expropriation index* measures high risk of "outright confiscation" or "forced nationalization." The *government repudiation of contracts index* measures the "risk of a modification in a contract taking the form of a repudiation, postponement or scaling down." See Sachs and Warner (1997) for details.

c Average over the period 1970-1990, as proportion of GDP

Figure 1.
Malaria risk - 1946, 1966, 1994



References

Anderson, J., M. MacLean and C. Davies (1996) "Malaria Research: An audit of international activity," PRISM report No. 7.

Bloom, David and Jeffrey D. Sachs (1998) "Geography, Demography, and Economic Growth in Africa," *Brookings Papers on Economic Activity* 2:1998.

Gallup, John Luke and Jeffrey D. Sachs with Andrew Mellinger. (1998) "Geography and Economic Development," *Mimeo*, Harvard Institute for International Development. (hyperlink <http://www.hiid.harvard.edu/pub/other/geoecd.pdf>)



Health, Demographic Change, and Economic Development in Africa

**David Bloom
David Canning**

Harvard Institute for International Development

March 10, 1999

Health, Demographic Change, and Economic Development in Africa

David Bloom and David Canning
Harvard Institute for International Development

Executive Summary

1. Health improvements are desirable in themselves, in terms of the improvements they bring in well-being, but they also have a direct impact on productivity and economic performance. Health improvements are not a luxury good that should await economic development; rather, they are a major factor in determining economic growth. Increased life expectancy and reduced fertility rates have a large positive effect on the growth rate of GDP per capita. Likewise, Health improvements have the potential to make a major contribution to a successful economic growth strategy in Africa.
2. The attached table sets out our estimates of the effect of health improvements on the growth rate of GDP per capita in each African country. We find large effects of increasing life expectancy from current levels to the world average of 65 years. This would increase the growth rate by more than 2 percentage points per year in some countries. Even in countries that are already above the world average level of life expectancy, further improvements would continue to have significant effects.
3. Lower fertility rates increase economic growth through increasing the ratio of working-age people to dependents. The attached figure plots the ratio of workers to dependents in Africa based on different United Nations population projections. In the table we report the estimated size of the effect on economic growth using United Nations projections assuming low, medium and high fertility. If fertility can be reduced to the level assumed in the United Nations low fertility projection the demographic gift can be quite large, adding over 1 percentage point per year to the growth rate in some countries.
4. These results imply the existence of a “demographic gift” to countries which achieve low fertility rates, but such a gift is not automatic. First, of course, it requires policies that encourage fertility to fall. In addition, economic policies must be formulated so as to allow the potential effects of demographic change to be realized. In the table we compare the effect of the “demographic gift” if a country sets policies that are as good as the world average values with the effect assuming the continuation of the policies that have been in place for the last 25 years. We find that poor policies can lead to the dissipation of most, or all, of the demographic gift.
5. The feedback from rising living standards to further improvements in health and reductions in fertility sets up the possibility of a virtuous cycle of cumulative causation.
6. We conclude that improvements in both general health and reproductive health are likely to be important parts of a successful growth strategy in Africa. Policies may include public health measures such as providing clean water and sanitation and inhibiting the transmission of malaria and HIV/AIDS as well as from improvements in the clinical health care system. The economic benefits from improved health are likely to be realized only if general economic policies are growth oriented.

Discussion

There is no doubt that good public health measures, a high quality health care system, and the benefits of a healthy population are desirable goals in all countries, including those in Africa. The difficulty is that in developing countries there is a tension between spending scarce resources on welfare projects, aimed at increasing well-being today, and investing in projects aimed at economic growth, which may increase the capacity to deliver welfare improvements in the future. In such an environment health care may be assigned a relatively low priority.

Recent economic research challenges this assessment. One of the most robust findings in economics is that, holding everything else constant, countries with higher life expectancy have significantly higher rates of growth of GDP per capita. We will discuss below why this is so by looking at the mechanisms through which higher life expectancy can increase economic activity. However, the main point is that increases in life expectancy, usually thought of as an indicator of the general health status of the population, are associated with subsequent long-run economic growth. This raises the prospect that a healthy population is not a luxury good, to be achieved when it can be afforded, but is, rather, a major determinant of economic growth and may be considered more as an investment good.

A similar story can be told for family planning activities and reproductive health. In the 1960s there was a general consensus on population pessimism, based on the idea that a high rate of population growth puts pressure on resources within a country and leads to a decline in the rate of economic growth. However, a large literature in the 1970s and 1980s largely failed to find a link between population growth and economic growth, leading to a significant weakening of the argument that family planning is an essential tool for generating growth in developing countries. Instead the policy emphasis has shifted to reproductive health as a way of directly increasing well-being, particularly women's wellbeing, with less weight being placed on the possible effects on economic growth.

Why Health and Demography Matter for Economic Growth

The rejection by most economists of population growth as a determinant of economic growth may have been premature. The problem is that the old literature failed to take account of the fact that there are two sources of rapid population growth, high fertility rates and low mortality rates. Low mortality rates lead to higher life expectancy, and have a beneficial effect on economic growth. On the other hand, a high fertility rate increases the youth dependency rate, the ratio of dependents to those of working age, and tends to reduce the rate of economic growth. Thus, it is not the total population growth, but the source of the growth that matters.

The important feature in population growth is not the overall rate of population growth but changes in the age structure of the population. Low mortality rates tend to increase population growth but the primary effect is to raise the numbers at older ages and to increase life expectancy. Improved health, as indicated by an increase in life expectancy, can increase economic growth by directly affecting labor productivity. In addition, a longer life expectancy can generate a need for retirement income, increasing savings rates during the working life.

Further, lower mortality rates increase the expected duration of working life and can raise the return to, and demand for, education. These effects all combine to encourage economic growth. Although there is clear evidence for such a growth effect, it is not yet possible to pinpoint which mechanism is most important empirically.

Eventually an increase in life expectancy raises old age dependency rates and may put a burden on social security systems. This problem is still remote in Africa and is just beginning to emerge in East Asia. To a large extent this issue only arises under a pay-as-you-go pension system in which the dependent old are reliant on the payments of current workers. In fully funded systems the old get retirement income from their accumulated savings. Channeling retirement savings into productive investment may not only be a good growth strategy, it may also avoid the financial problems a transfer-based pension system faces when the old age dependency rate increases.

Column 1 of the attached table shows the estimated impact on growth rates of GDP per capita if countries in Africa manage to raise their life expectancy levels to 65, the current world average. The effects in some countries are very large, giving an increase in growth rates of GDP per capita by around 2 percentage points a year. Some African countries have already achieved life expectancy in excess of 65. For these we do not report an impact figure but empirical results suggest that the growth effects of raising life expectancy persist even at high levels of life expectancy.

Reductions in fertility slow the rate of population growth but more importantly they lower the ratio of the young to the working age. The attached figure plots the ratio of working-age to non-working-age population in Africa using different population projections from the United Nations based on different assumptions about how fast future fertility rates in Africa fall. The ratio of working-age population to dependents is set to rise in Africa from now onwards, giving a boost to per capita incomes. If fertility rates fall as fast as is assumed in the United Nations low fertility scenario, the ratio of workers to dependents is set to rise from 1.15 today to around 1.7 in 25 years time.

The table at the end of this summary shows the effect of the “demographic gift” on economic growth for the low fertility, medium fertility and high fertility United Nations projections for African countries. The predicted effect depends on how fast the age structure of each country is projected to change. In addition, the growth impact is estimated to be larger than the pure accounting impact of the reduced dependency rate. This may occur for several reasons. For example, less time is required for child care, perhaps leading to increased labor force participation, and smaller families may allow greater investment in education per child, raising average human capital.

In addition to these effects of health and the demographic transition on economic growth there is reverse causality: economic growth, higher income levels, and higher levels of education (particularly female education) affect health, life expectancy, and fertility rates. At a technical level this raises a problem: we must be careful to establish the direction of causation, as well as a simple statistical correlation, in our analysis. Taking account of this requires that we isolate the feedback pathways in each direction.

More importantly, the presence of positive feedback raises the possibility of a virtuous growth spiral, with cumulative causality. Improvements in health lead to increased life expectancy. In addition, reductions in infant mortality can reduce the desired fertility rate due to higher survival probabilities and to a lower risk of being without care in old age. Provision of reproductive health services can help to ensure that these reductions in desired fertility lead to reductions in actual fertility. These changes in health, mortality rates, life expectancy, and fertility can be powerful forces in favor of faster economic growth. In turn, economic growth, coupled with increases in education, can promote improvements in health and reductions in fertility. This can give rise to another round of growth, and so on.

Policy Effects

The demographic gift is not automatic; it requires health improvements, including improvements in reproductive health, to generate demographic change. The effects of demographic change are largely seen in people's increased desire to work, to save, and to be educated. To realize the potential of these effects appropriate policies and institutions must be in place. Labor markets must be capable of absorbing an increasing labor force. Financial markets must be able to channel savings into productive investment. The education system must meet the demand for increased education.

The estimates of the effects of the demographic gift in columns 2, 3, and 4 of the attached table are based on each country having policies and institutions that are as good as the world average. The policies we focus on are openness (a measure of tariff rates, etc.) and government deficits. We use as a measure of institutional quality a composite index (representing the rule of law, lack of corruption, etc.). In column 5 we report our estimate of the impact of the demographic gift (United Nations medium projection) if countries follow the same policies as in the past. For all the African countries for which we have data the demographic effect is smaller, sometimes much smaller, assuming the continuation of the policies and institutions that have been employed over the last 25 years, than if policies were changed to the world average levels. Note that the difference between columns 3 and 5 is due to the impact of the demographic gift under different policy scenarios. Improving policies and institutions will have a large positive effect on growth on their own, independently of the effect of the demographic gift. Good policies are always beneficial, but they are particularly important during the demographic transition from a low life expectancy, high fertility country to a high life expectancy, low fertility country.

Conclusion

It is important to take a balanced view of economic growth and development. It is highly unlikely that there is one single factor that drives the growth process. Health, and its impact on age structure, can be an important factor, but it is not the only one. A growth policy that focuses only on one mechanism is certain to be too narrow. The argument for putting some emphasis on health and age structure as factors that affect growth is the large magnitude of the growth impacts we find from these variables in empirical studies.

Africa's demographic transition is just beginning and presents countries with an opportunity to accelerate their economic growth. The picture we see of rising life expectancy in Africa and falling fertility rates, together with increases in the working-age to non-working-age ratio, presents an opportunity to generate substantial improvements in Africa's economic performance. To take advantage of this opportunity countries must have appropriate public health policies and reproductive health policies. In addition, the "demographic gift" such policies generate can only be realized fully if labor, financial, and educational markets and institutions function well.

The appropriate health policies to generate the demographic transition are not entirely clear cut. It may be that large-scale health improvements are more closely connected to public health projects such as the provision of clean water and sanitation than to direct provision of health services. In addition, Africa faces two infectious diseases on a large scale, malaria and HIV/AIDS. Although HIV/AIDS may not be projected to have a large impact on total population numbers, it may have an effect on economic growth by removing prime-age workers from the labor force and increasing dependency rates. Tackling these diseases may require international coordination of research and of containment strategies given the obvious problem of international spillovers. It may be very difficult for one country to make much headway in combating these illnesses unless neighboring countries are also active in the effort.



Strategies for Combating The Health Crisis in Sub-Saharan Africa

Jonathon Simon¹
Sydney Rosen¹
Donald M. Thea¹
Scott Gordon²
Paul S. Zeitz³

March 11, 1999

¹Harvard Institute for International Development

²Harvard School of Public Health

³Johns Hopkins University School of Hygiene and Public Health

ABSTRACT

The health status of people living in sub-Saharan Africa has dramatically declined during the 1990's. Infectious diseases, maternal mortality and ineffective use of resources have been shown to negatively impact efforts to bolster economic development thereby reducing the resources available to improve health. This strategy briefing focuses on the most critical public health issues confronting African ministers and proposes a series of recommendations to address the problems. The recommendations are organized in accordance with the systemic nature of the crisis, and address the need to do the following: mobilize additional resources, use resources more efficiently and promote new approaches to public health financing and service delivery. The inter-sectoral nature of the public health crisis and its macroeconomic costs and micro-economic burdens on households, will require active and coordinated participation from all levels of government and international agencies. African governments are ideally positioned to begin the processes of reform and negotiations with international donors outlined in this briefing.

The Public Health Crisis in Sub-Saharan Africa

March 11, 1999

I. Public Health in Africa in the 1990s

1. Introduction

Public health in sub-Saharan Africa in the last years of the twentieth century is a disaster. If the 1970s and 1980s were known as the decades lost to cross-border conflict, economic stagnation, and social decline, historians will label the 1990s as the decade lost to epidemic, faltering health service delivery, and serious deterioration in all measures by which societies gauge their health. Life expectancy, child mortality, maternal mortality, and other key public health indicators have remained flat or deteriorated, some markedly, in the past ten years. Life expectancy at birth is the lowest in the world and has fallen by as much as two decades in some parts of the continent. An African child born today will, on average, live eleven fewer years than will a child born in a low-income country in Latin America or Asia. One out of seven African children dies before his or her fifth birthday and maternal mortality rates are among the highest in the world. Malaria, a disease once thought to be in retreat, now kills more than a million Africans each year. Access to quality health care has disintegrated in the face of crumbling infrastructure, a dearth of trained personnel, and a lack of essential drugs.

Looming over all these problems is the HIV/AIDS pandemic, now considered the worst infectious disease catastrophe since bubonic plague halved the population in the five years after it reached Europe in 1347. Although marching at a slower rate than plague, the AIDS epidemic is accelerating and will kill over 20 million Africans during the next decade. The effect HIV will have on African economic development and national security is staggering. AIDS is a public health crisis the magnitude of which has not been imagined in modern times. Although some countries and regions have fared better than others, the overall picture of public health in sub-Saharan Africa as we enter the next century is dismal.

Over the last 15 years most of sub-Saharan Africa has experienced less economic progress than any other part of the world. The issue extends well beyond disappointing economic growth: between 1985 and 1996, twenty-one sub-Saharan countries *contracted* economically. The overall per capita economic growth rate, weighted by population, was estimated to be *negative* 0.6 percent per year (and a dismal negative 2 percent per year in the first half of the 1990s). Although a group of ten or so countries began to rebound in the mid-1990s and are now growing rapidly, driving up the region-wide per capita average GDP growth to 1.4 percent/year, a dozen others are still experiencing falling GDP/capita (Fischer et al. 1998). As a result of this decade and a half of economic faltering, nearly one half of the continent's population lives in abject poverty and can neither defend itself effectively against disease nor pay for treatment once infected. Poverty alleviation, driven by rapid, and equitable, economic growth that benefits the poor as well as the rich, is thus the goal for improved health.

The purpose of this briefing on the public health crisis in sub-Saharan Africa is to focus attention on the most critical public health issues confronting senior African economic policy makers and to identify near-term priorities for government action. We believe that improving public health is essential to enabling economic growth and development.

Health in Africa is in crisis and poses a threat to the political and economic initiatives that are at long last possible with the end of the Cold War. Failure to address the public health crisis commits too many people to an early death, abandons too many women and children to unnecessary illness, extracts too many able workers from the workforce, and risks too much social instability. Failure to act undermines the potential benefits of economies that are more open and embrace more participatory democratic systems, and it further widens the gap between African nations and the rest of the world in the new millenium. The crisis in public health in Africa is not a health-sector emergency—it is a national emergency. Although some of the recommendations made here are directed at the public health system and health professionals, *many can only be implemented through the concentrated efforts of national initiatives led by the senior economic managers and political leaders of African nations.*

2. A brief review of the decade

Although the list of the region's serious health concerns is long, four key issues—child mortality, maternal mortality, malaria, and HIV/AIDS—illustrate the disturbing story of public health in sub-Saharan Africa in the 1990s.

- Improvements in under-five mortality achieved through hard-fought battles in child and maternal health over the past several decades have slowed in most countries, leaving African children with the poorest survival to age five of children anywhere in the world. In seven countries, child mortality actually increased during the first five years of the decade. The most important killers of children in Africa are infectious diseases, alone or in combination with poor nutrition. Lower respiratory infections; malaria; measles; and diarrheal diseases, associated with poor water supply and sanitation, together account for 65 percent of under-five mortality, and nearly 40 percent of the total disease burden in sub-Saharan Africa (Murray and Lopez 1996). In high-income countries, these four diseases have been almost eliminated or are routinely treated, resulting in virtually no deaths. As a result, an African child is three times more likely to die before the age of five than an East Asian child, and twenty times more likely to die before five than a child in a high income country (Ibid).
- Maternal mortality rates in sub-Saharan are the highest in the world—fully three times the rates of developing countries as a whole. In 1990, one out of every sixteen African women died of maternal causes in Africa, compared with the 1990 rate in North America of one in 3,700 (WHO 1999). The disproportionately high maternal mortality seen in sub-Saharan Africa is not simply a consequence of the low income afflicting this region. Maternal mortality in Ivory Coast is 30 times higher than amongst Sri Lankan women with the same income level of approximately \$700/year (World Bank, 1997a).

- Malaria, never brought under control even in the best of times, has re-emerged as a major killer in the region. Ninety percent of the world's burden of malaria is borne by sub-Saharan Africa. Current estimates put malaria-related deaths at 1.5-2.5 million per year, and the number of clinical cases at half a billion—nearly the equivalent of one clinical case per year for every African citizen. The economic costs of malaria to the region are staggering—\$1.7 billion in 1995, according to one widely cited estimate—or 1 percent of the region's forecasted GDP for that year (Shepard et al. 1991). A tenth of all hospital admissions and 20-30 percent of clinic visits are due to malaria. For poor African households, the cost of malaria was estimated at 32 percent of annual household income in one country in 1992 (Ettling et al. 1994).
- The toll of the HIV/AIDS epidemic on sub-Saharan Africa is horrifying. More than two thirds of the world's HIV infections and AIDS cases are found in Africa, and the rate of increase there is higher than in any other region. More than 85 percent of the deaths due to AIDS worldwide have occurred in this region and a quarter of these are in children. In 1998 alone AIDS killed two million people and was responsible for 5,500 funerals each day (UNAIDS 1998). Life expectancy is dropping throughout the continent. In one heavily affected country it has fallen by 22 years to just 42 (World Bank 1997b). Especially alarming for Africa's economic future is the disproportionate impact on educated young adults who hold technical and managerial positions. In one study 34 percent of people with post-secondary education were HIV-positive, compared to just 18 percent of those with a primary education, and civil servants were more than three times more likely to be infected than farmers (World Bank 1997b). As current HIV infections gradually become full-blown AIDS cases, the impact on African productivity and economies further impair development and growth.

Taken together, the diseases (which do not include tuberculosis, a major killer in its own right) described above account for 45 percent of all mortality and 43 percent of the overall burden of disease in sub-Saharan Africa. What makes these figures particularly dramatic is the realization that in other part of the developing world, such as Latin America, these conditions account for just 15 percent of all mortality (Murray and Lopez 1996)—and people live an average of eighteen years longer (World Bank 1998). Africans, even in the poorest countries, do not need to die at such rates from such causes.

Heightening the impact of these diseases is the erosion of health systems and health infrastructure over the decade. The overall lack of resources, as well as the low priority given to health in national resource allocations, and in some cases, the fiscal discipline required by structural adjustment programs have drained the health sector of both physical and human resources. African governments spent about 2 percent of GDP on health services in 1996, slightly below the average for the developing world, but far below the 6 percent average of high-income countries (World Bank 1998). Per capita spending on public health in sub-Saharan Africa has increased by about 1 percent per year in the past decade, the lowest annual increase of any developing region (Gupta et al. 1998). Facilities and technology have deteriorated badly and often function without even the most basic supplies. The loss of the human capital stock has followed this decline as trained health personnel leave national health systems. The failure to use available resources efficiently, for a variety of reasons, has only worsened the problem. The

problems listed above do not affect every country in the same way or to the same extent. Though some may be doing better, overall the whole region is immersed in a public health crisis unlike any other region of the world.

3. Public health and economic development

The five issues described above are just selected pieces of the public health crisis. Hunger and malnutrition, national and domestic violence, alcohol and tobacco abuse, road accidents, air and water pollution, tuberculosis, among other conditions take a higher toll on sub-Saharan Africa than they do on most other parts of the world. The toll is not just physical and social—it is also economic. The public health crisis extracts macro-economic costs, imposes micro-economic burdens on households, and levies inter-sectoral costs and responsibilities.

Illness reduces the expected benefits of investments in human capital and reduces labor and entrepreneurial productivity. Country-specific studies estimate the economic burden of illness at 13-16% of per capita GDP (King and Wang, 1993). A recent study making cross-country comparisons of the effect of malaria (alone or as a marker of other tropical diseases) on macro-economic growth suggests that malaria reduces GDP growth by 1.3% per year after taking into account initial poverty, economic policy, tropical location, and life expectancy among other factors (Gallup and Sachs, 1998).

The fragile but significant economic improvements being seen in some sub-Saharan African countries due to recovery from armed conflicts, exploitation of recently discovered oil reserves and improved policies will in part be sustained by private capital inflows (Fischer, 1998). This is particularly true in the setting of declining official development assistance. Productivity of private capital in some sub-Saharan countries is adversely affected by inadequate physical infrastructure and an inadequate stock of human capital (Findlay, 1996). Widespread disease and poor health affecting the workforce will further impair Africa's diminished ability to attract private foreign capital compared with other developing countries (Bhattacharya, 1997).

Several studies on the total cost of disease to African households concluded that households spend an average of 6.4 percent of household income on illness (World Bank 1994). The share of per capita GDP lost to illness is even higher—an average of 15 percent. Adults typically lose as many as twenty-five days of productive time per year, either to their own illness or to caring for sick family members (Rosen and Vincent 1999).

One of the distinguishing features of public health management in sub-Saharan Africa is the extent to which health outcomes are determined by activities in other sectors. Nowhere else is the effect on public health of investments in infrastructure, environment, and agriculture as pronounced as it is in Africa. Perhaps the most compelling example of this is in the area of water supply and sanitation infrastructure. Two thirds of the rural population of sub-Saharan Africa lacks access to a safe and convenient water supply, and 81 percent lack even basic sanitation facilities. Because of the connection of these infrastructure services to infectious disease transmission, some 11 percent of all morbidity and mortality in the region are attributed to poor water supply and sanitation services (Rosen and Vincent 1999). Significant progress cannot be

made in the fight against diarrheal diseases by the health sector alone—investment by government agencies responsible for infrastructure is an absolute requirement.

Household (family) behaviors are the key to preventing disease and managing illness. Families manage their micro-environments, initially recognize ill health, and make the decisions on when and where to seek health care services. Families need to have access to the financial resources and information needed to avoid preventable diseases. They need to have sufficient resources to access adequate quality, cost-effective care when illness strikes. Information and medical technology are important, but poverty alleviation is the essential prerequisite for improving health status for many African families.

II. Recommendations

The preceding section draws attention to several of the most urgent public health problems affecting sub-Saharan Africa in the 1990s. It is also clear that there is great variability across the continent, in both the relative importance of different diseases and the resources that can be brought to bear to control them. Because of this variability, recommendations that apply generally to the entire region must be made with caution, and with the understanding that each recommendation must ultimately be tailored to the country or community to which it is applied. Regardless, the facts summarized in the preceding section and our assessment of the public health issues in sub-Saharan Africa lead us to make eight key recommendations for addressing the public health crisis of the new millennium. These recommendations can be organized into three areas: mobilize more resources; use the resources more efficiently; and promote new approaches to public health financing and service delivery.

1. Mobilize more resources for public health

As noted above, there is a severe shortfall in the human and financial resources available to improve health in sub-Saharan Africa. African nations are simply not spending enough on health at the current levels to improve the health status of their populations. While it must be recognized that mobilizing additional resources is critical and plans need to be made for how these funds will be raised, it is also important to realize that funds alone will not provide a complete solution to the public health crisis. Resource identification is a necessary, but not sufficient prerequisite, for achieving widespread, sustainable health improvements.

In an era of massive public debt and relentless pressure from international lenders and investors to control budget deficits, mobilizing significant new resources for public health will require new and ambitious initiatives and perhaps even a re-framing of conventional economic policy. We recommend two unconventional ideas and one old approach.

Recommendation #1: Swap debt for health

African countries currently bear an external debt burden of \$227 billion. Service on this debt, some \$14.5 billion per year, is equal to 5 percent of the region's GDP and consumes nearly 15 percent of export earnings (World Bank 1998). Many people believe that debt relief is essential

for economic growth and development in sub-Saharan Africa. But, it offers one of the most promising approaches for targeting significant new resources at the health crisis, we believe that debt relief is also essential for improving health.

For debt relief to be politically acceptable to creditor countries, it must promise measurable benefits to African people—especially the poor. Health offers such an opportunity. We propose a “Debt for Health” swap program. In exchange for some level of debt relief, African countries will commit to using a portion of the resources spent on debt servicing for a major expansion of public health services, with an emphasis on HIV/AIDS, children’s health, and infectious disease prevention and treatment. African governments are currently spending approximately 2 percent of GDP on health services (Gupta 1998), relieving Africa of 40 percent of its external debt would thus allow a *doubling* of spending on health care. Benefits from such a program would accrue to both sides—African countries would enjoy improved public health and economic productivity, and donor countries would see tangible improvements in both indicators as well as improved public support that such a program is likely to generate.

Recommendation #2: Declare war on infectious disease

In 1990, Africa’s casualty rate from three infectious diseases—AIDS, malaria, and tuberculosis—exceeded its casualty rate from all forms of violence—war, crime, and others—by a factor of three (Murray and Lopez, 1996). Infectious disease is the most serious security threat facing African nations in the world today. Any one of the two resurgent epidemics, malaria and tuberculosis, or the new scourge, HIV, would be sufficient to stifle human development. Acting together, these diseases are threatening to drain the vitality from every effort to improve welfare and promote development. They are the most serious external threat facing any sub-Saharan country today, and a portion of the resources that typically are invested in more traditional national security activities should be directed to fighting this enemy.

We recommend that African governments declare war on infectious disease and re-direct a share of their national defense budgets to fighting this war. *Governments must recognize that they are facing an enemy that has already declared war on them and is imposing intolerable casualty rates on their populations.* Only by recognizing infectious diseases as a grave threat to national security can governments mobilize the resources and the commitment needed to interdict the public health crisis on an effectively large scale.

Massive cuts in defense spending may not be required (even if appropriate). If developing nations were simply to freeze defense expenditures at current levels and redirect the 7.5% annual increase that would otherwise occur, 10-15 billion dollars per year would be available for health expenditures (UNDP, 1991). Though individual and community risk reduction measures are essential to combat infectious diseases, the commitment of government leaders at all levels to prioritizing the efforts to fight infectious diseases and their willingness to convey this commitment to their constituents at every level of the political process will be crucial. Cutting or freezing defense spending and re-allocating the savings to fighting infectious diseases would send a clear message to the populace and foreign governments of the priority and seriousness with which the national government considers the threat from infectious diseases.

Recommendation #3: Capture and mobilize domestic expenditures on health

African families, in every income group, spend money on health and health care. Too often, the middle and upper income families preferentially access the heavily subsidized urban, curative care hospitals for their health care needs. These hospitals, financially supported by central government revenues, are providing subsidized care to the portion of the population most able to pay for services. Initiation of user fees and cost sharing/cost recovery mechanisms have been shown to be effective if quality services, including an ensured supply of essential drugs, are provided in a timely fashion. Experience has shown that willingness to pay for quality services is not limited to the wealthy alone; even low and moderate-income households will pay for services if they are getting value for their money. Ending the subsidies for the people able to pay and re-directing the revenues to the provision of an essential package of services for the more needy components of the population has both efficiency and equity benefits.

2. Allocate public health resources more efficiently

No matter what level of resources is available for public health, better allocation of those resources is critical to achieving real improvements in public health. Several of the steps needed to prevent the most important public health problems are relatively inexpensive on a per capita basis, and much can be achieved if resources are used efficiently. We have five specific recommendations for doing this.

Recommendation #4: Create and fund an “Essential Package of Services”

Each country should identify a set of high priority health services that it will strive to provide to every citizen and should allocate its national health budget accordingly. The widely held belief, based on the past half-century of experience, is that immunization services, sexually transmitted diseases (STD) and AIDS education, family planning, integrated management of childhood illness, safe motherhood interventions, and childhood nutrition support are likely to be the most cost-effective measures countries can take to reduce morbidity and mortality. The recommendation to focus on a package of essential services—that is, provide a limited number of services very well, rather than a large number poorly—is consistent with current approaches of the WHO and the World Bank and is thus likely to garner external donor support.

By focusing on a small number of critical interventions that provide large benefits, health systems are likely to deliver higher quality services at much lower cost and to a larger share of the population than they currently reach. The World Bank 1994 estimate for a low-income African country of one possible package of essential services, including basic clinical services, water supply and sanitation investments, and institutional support, was \$13 per person per year. In a higher income country, the estimate only increased to \$16 per person per year. While these estimates are just rough indicators of anticipated costs and are likely to vary widely among individual countries and communities, they suggest that paying for a package of essential services is not beyond the means of many African countries. These costs are reasonable, particularly if the costs are shared among governments, households, and donors. In 1990, total health expenditures equaled or exceeded \$16/capita in about a third of the countries in Africa; in

the remainder, they averaged about half this amount. For the latter group, paying for a package like this will require new resources to be invested in public health, but the costs remain within a feasible range (World Bank 1994).

It is important to note that in selecting the services for the package, countries will have to make explicit their priorities and acknowledge that there is a limit to the services that governments can provide. The package chosen by a country should reflect its own health conditions and resources, so that delivery of these services to the majority of citizens is a realistic goal. Delivery should be monitored carefully to ensure that targets are met and to justify the resources that are devoted to the package.

Recommendation #5: Reallocate resources from expenditures for urban curative care to disease prevention.

For a number of historical and political reasons, a disproportionate share of health resources has traditionally been allocated to curative care for urban populations, particularly for the most affluent households. Sub-Saharan Africa allocates a larger share of its health resources to curative care than any other region of the world: 62 percent in 1994 (Gupta et al. 1998). If the public health crisis is to end, more resources will need to be dedicated to broad-based, cost-effective health interventions, with a focus on the infectious diseases discussed in the previous section: childhood diseases, malaria, HIV/AIDS, and tuberculosis.

Arguably the best investment of public health dollars available is on effective childhood vaccination programs. The savings in health care dollars not spent on the clinical management of the numerous vaccine preventable childhood diseases far exceeds the costs of effective vaccination programs, including the added costs of mobilizing national immunization days. Other efficient and cost-effective preventive measures which, if effectively implemented will decrease public expenditures on health care, are maternal and child nutrition programs that promote well-balanced nutrition comprised of locally available foodstuffs.

By far the most successful intervention in slowing the spread of sexually transmitted diseases, including HIV/AIDS, is the promotion of condom use and safe sexual practices. Prior to the development of an effective HIV/AIDS vaccine, which is not a realistic probability in the near future, education and social mobilization are the most cost-effective and only realistic choices facing most sub-Saharan countries. In the case of tuberculosis, interrupting the foci of spread by the identification and treatment of active cases is the cornerstone of control. Moreover, huge efficiencies in control can be achieved by interventions that are both early and focused on the populations with the highest risk of contracting and spreading the disease. For these two closely linked epidemics, interventions that target commercial sex workers, attendees to STD clinics, truck drivers, prisoners, or refugee populations, etc. are preferred. From a public health standpoint, "an ounce of prevention among high-risk groups is worth 10 pounds of cure".

Recommendation #6: Promote private sector provision of health services

In many countries, the private sector—both NGOs and for-profit firms—has proven to be a lower-cost provider of some health services than the government sector. Government regulation of the health sector continues, but the government is no longer the sole, or in some cases, even the major, health service provider. The government role may be more appropriate as the financing agency, rather than the service delivery unit, for health services. For the private sector to operate effectively, direct and indirect constraints on its activities must be removed. These include inappropriate regulations that constrain private sector provision of health services, for example, long delays and prohibitive fees for licensing private sector providers, or customs and excise systems that delay or charge duties on health products such as medicines or bednets. In addition, economic incentives should be created to encourage private sector provision of public health measures that promote healthful behavior in workplaces and schools (e.g. smoking or alcohol abuse programs and distribution of condoms and sex education materials).

In addition to private sector firms being encouraged to expand their share of the health services market, larger scale industrial or manufacturing firms and trade union associations should be encouraged to assume even greater responsibility for the health of the workforce. Currently, much of the cost of sustaining a healthy workforce is shifted onto the government. As governments struggle to meet this burden, there is an economic (as well as social) argument for firms and labor unions to meet worker health needs directly.

One of the largest components of the cost of production in the private sector is often labor and worker training. The costs of replacing workers and productive time lost by diseases such as HIV/AIDS, tuberculosis, malaria, and alcohol abuse affecting the working population are substantial. This is particularly true of HIV/AIDS that disproportionately affects the technical and managerial echelons of the private and public sectors. The production inefficiencies and real costs associated with the need to hire and train additional managers or technicians for positions regularly vacated due to disease are substantial. This is in addition to the direct financial losses due to illness, absenteeism, health care, and funeral costs. Research is ongoing on the costs to competitiveness and profitability paid by those companies located in areas of high disease prevalence, in the hope that the results will provide an economic rationale for them to assume a greater role in providing basic health services to their employees.

Recommendation #7: Improve drug supply systems

Many of the infectious diseases that are taking such a heavy toll on African lives can be treated using well-known, widely available drugs. World Bank and WHO research indicates that African clinics typically spend 20-30 percent of their budgets on drug purchases, making pharmaceuticals the second largest health expenditure, after personnel costs. In the late 1980s, drug purchases accounted for 0.76 percent of GDP. Despite this significant allocation of budget resources, however, studies in the late 1980s estimated that 60 percent of Africans do not have access to the drugs they need.

The average cost of providing medications for 85 percent of the infectious diseases in Africa (with the important exception of AIDS) is estimated at \$1.60 per person per year. In the late 1980s, the most recent period for which information is available, African countries spent an

average of \$2.10/capita/year on pharmaceuticals. Given these figures, it is difficult to argue that the shortfalls in drug availability can simply be attributed to “too little money”.

Although in some cases more resources will be needed, especially for the poor, the main impediment in preventing Africans from having access to a reliable supply of essential drugs is inefficiency and waste in drug procurement. *On average, \$88 out of every \$100 spent on pharmaceutical purchases in Africa is lost.* The losses occur at each stage of the procurement and distribution process, roughly as follows:

Initial investment	\$100
Purchase of the most expensive drugs rather than low-priced equivalents	-\$10
Absence of bulk purchasing—buying small quantities rather than large	-\$13
Lack of competitive bidding by prospective suppliers	-\$27
Poor storage, inventory control, and distribution processes	-\$19
Excessive prescriptions, so that some patients acquire unnecessary drugs	-\$15
Incorrect use of drugs by patients	-\$3
Real benefits to African patients	\$12

For every \$100 spent, African patients receive only \$12 of benefits (World Bank 1994).

A number of steps can be taken to improve drug procurement in Africa and recover some of the value that is now wasted. These include:

- 1) developing and using a list of essential drugs for each level of the health system and allocating budget resources accordingly;
- 2) improving understanding of drug needs and of international pharmaceutical markets so that bulk purchases of cost-effective drugs can be made;
- 3) encouraging the development of private sector—both commercial and NGO—pharmaceutical suppliers; and
- 4) strengthening monitoring of drug distribution to reduce theft and losses due to poor management.

Recommendation #8: Promote infrastructure investments that enhance public health

Basic infrastructure improvements—particularly in the area of water supply and sanitation—have the potential to reduce the burden of disease in Africa significantly, and might be a prerequisite for the success of other public health interventions. Although most of the analytic work is from outside Africa, the health effects of water supply and sanitation improvements are profound. Studies have estimated these interventions reduce morbidity from diarrheal diseases—one of the main killers of children—by an average of 26 percent, and child mortality by an average of 55 percent (Esrey et al. 1991). Although water supply and sanitation improvements alone do not always ensure major health benefits, most researchers have concluded that long-term, sustainable improvements in health cannot be achieved without them. Water supply improvements also create substantial health and economic benefits to poor households in terms of time and energy saved from carrying water (Rosen and Vincent 1999). Roads and electricity are also like to have significant positive public health externalities.

While resources for infrastructure investments of all kinds are scarce in Africa, we recommend that existing resources be allocated to maximize benefits to public health. In some cases, this will mean shifting resources away from expensive, high technology projects and toward basic water, sewage, and electrical connections.

3. Summary and conclusion

The state of public health in sub-Saharan Africa reviewed above outlines the observation noted at the beginning of this paper: public health in the region is a disaster and impairs economic development in Africa. We make this point not to detract from what has been accomplished in past years, but to emphasize that the health situation is worsening and urge African policy makers to regard health as a national emergency and to respond accordingly. It has been said that “desperate times call for desperate measures,” and these are indeed desperate times in the state of African’s health.

We offer three comments in summary

Comment 1: The public health crisis is a pressing national issue.

The health crisis is not solely the concern of the Health Minister or limited to the health sector. The impact of the health crisis on national security and its deterrent effect on economic growth and development force the problem onto the desk of the senior Executive (President or Prime Minister) and the senior economic management team (Ministers of Finance, Treasury, Planning, and Trade). The longer sub-Saharan African nations wait to substantively address this crisis, the more extensive and the more constrained the policy and program options will be, and the higher the costs to confront the issue will become. The health problems are accelerating, compounding, and spreading to other sectors of the society. Delays will incur high human and economic costs that will impose themselves on this generation and the next. To promote social stability, human development, economic prosperity and to save untold millions of lives, immediate action is required.

Comment 2: Recognize the transboundary nature of many health problems and develop regional responses.

Many of the infectious diseases taking such a toll on sub-Saharan African households represent regional, rather than just national, problems. Just as rivers that flow from one country to another and water resources must be managed regionally, so must diseases like HIV/AIDS, resurgent tuberculosis, and resistant strains of malaria. Even in the absence of social dislocations such as war, famine and large migrations of refugees which accelerate the cross border flow of disease, all of these public health problems are regional and cannot be contained within any set of conventional borders. Sector and regional alliances must be made and cross-border cooperation in fighting these diseases must be fostered and maintained.

Comment 3: Encourage and support innovative approaches by communities, health providers, and other sectors to promote public health.

Although a few specific public health policies and programs in selected countries in sub-Saharan Africa have been successes, it is difficult to avoid the conclusion that overall public health is in retreat on the continent. In some cases, effective and affordable tools do not yet exist; in other cases, and perhaps more often, tools do exist but have not been applied effectively. In either case, new approaches to confronting the public health crisis are needed. Both government agencies and non-governmental organizations must be encouraged to develop and implement innovative approaches to promote public health programs which mobilize and empower the communities in which they will be applied. It is only through widespread community participation that effective public health measures will be delivered to the people who have the greatest need. We believe that innovation in program development is necessary to find new and effective means to confront this challenge.

Addressing the public health crisis in sub-Saharan Africa will require acts of commitment from national leaders and regional institutions. It will also require major collaborative from donor nations and development banks. We hope the discussions emerging from the Partnership for Economic Growth and Opportunity in Africa Initiative will provide a forum for these issues to be discussed with the USG.

References

- Bhattacharya, A., et al. 1997. "Private Capital Flows to Sub-Saharan Africa: An Overview of Trends and Determinants," in Z. Iqbal and R. Kanbur (eds) *External Finance for Low-Income Countries* (Washington: International Monetary Fund).
- Esrey, S. A., et al. 1991. "Effects of improved water supply and sanitation on ascariasis, diarrhoea, dracunculiasis, hookworm infection, schistosomiasis, and trachoma." *Bulletin of the World Health Organization* 69 (5): 609-21.
- Ettling, M., et al. 1994. "Economic impact of malaria in Malawian households." *Tropical Medicine and Parasitology* 45: 74-79.
- Findlay, R, 1996, "Modeling Global Interdependence: Centers, Peripheries and Frontiers," *American Economic Review* (May).
- Fischer, S., et al. 1998. "Africa: is this the turning point?" IMF Paper on Policy Analysis and Assessment. International Monetary Fund. Online. <http://www.imf.org/external/pubind.htm>.
- Gallup, J. L., and J. D. Sachs. 1998. "The economic burden of malaria." Center for International Development, Harvard University.
- Gupta, S., et al. 1998. "Public spending on human development." *Finance & Development* 35 (3). Online. <http://www.imf.org/external/pubs/ft/fandd/1998/09/gupta.htm>.
- MFI. 1998. "Malaria background information, May 1998." Malaria Foundation International. Online. <http://www.malaria.org/BGINFO.HTM#ECONOMIC>.
- Murray, C. J. L., and A. D. Lopez. 1996. *The Global Burden of Disease*. Global Burden of Disease and Injury Series Volume 1. World Health Organization.
- Rosen, S., and J. R. Vincent. 1999. "Household water resources and rural productivity in sub-Saharan Africa: a review of the evidence." HIID Development Discussion Paper No. 673. Cambridge, MA: Harvard Institute for International Development.
- Shepard, D. S., et al. 1991. "The economic cost of malaria in Africa." *Tropical Medicine and Parasitology* 42: 199-203.
- UNDP. 1991. *Human Development Report*. United Nations Development Programme, New York, NY, Oxford University Press.
- World Bank. 1994. *Better Health in Africa: Experience and Lessons Learned*. Washington, DC: World Bank.
- World Bank. 1997a. *Health, nutrition & population. Sector Strategy*. Human Development Network. World Bank, Washington DC.

World Bank. 1997b. *Confronting AIDS: Public Priorities in a Global Epidemic*. Oxford University Press. Online. <http://www.worldbank.org/aids-econ/confront/index.htm>.

World Bank. 1998. "World Development Indicators 1998." CD-ROM.

WHO. 1996. *Investing in Health Research and Development*. Report of the Ad Hoc Committee on Health Research Relating to Future Intervention Options. Geneva: World Health Organization.

WHO. 1999. "Maternal mortality fact sheet." Safe Motherhood Initiative, World Health Organization. Online. http://safemotherhood.org/init_facts.htm.

APPENDIX

No.	Recommendation	Lead Agency	In Cooperation With
Mobilize more resources for public health			
1	Swap debt for health	Ministry of Finance	International lenders
2	Declare war on infectious diseases	Entire government	Donor agencies/regional countries
3	Capture and mobilize domestic expenditures on health	Ministries of Health and Finance	Provincial, state, and district health system
Allocate public health resources more efficiently			
4	Create and fund a "Package of Essential Services"	Ministry of Health	WHO, UNICEF, and other public health institutions
5	Reallocate resources from expenditures for urban curative care to disease prevention.	Ministries of Health, Planning, and Finance	Multilateral and bilateral donors
6	Promote private sector provision of health services	Ministry of Finance and Ministry of Health	Whoever sets the rules for the private sector
7	Improve drug procurement procedures	Ministry of Health and Ministry of Finance (Customs and Excise Dept.)	Whoever regulates imports
8	Promote infrastructure investments that enhance public health	Ministries of Finance, Public Works, Planning, and Health	Donor nations/development banks
Summary Comments			
1	Recognize the public health crisis as a national issue	Entire government	Donor nations/development banks
2	Recognize the transboundary nature of many health problems and develop regional responses	Ministry of Foreign Affairs	Ministry of Health
3	Encourage and support experimentation and innovation by health providers from all sectors	Entire government with Ministry of Health key to changes in the health sector	Private sector, NGOs, donor agencies