



Why Environmentalists Should Care About AIDS

March 12, 2003 -- AIDS has killed millions of farmers in sub-Saharan Africa, compromising the nutrition and thus accelerating the death of millions more AIDS victims, resulting in further depletion of the agricultural sector. The Global Service Corps is working to break this vicious cycle by introducing better agricultural techniques and educating locals about HIV.

Severe Acute Respiratory Syndrome (SARS) has grabbed recent headlines with its flurry of deaths and politically sensitive quarantines. The highly infectious Ebola virus is a particularly gruesome and frighteningly swift killer. But no newly emergent disease has had a greater impact on global society than Acquired Immune Deficiency Syndrome (AIDS). Incurable and fatal, with a latency period long enough for the infected to unknowingly spread the disease to perhaps hundreds of people, AIDS has taken a dreadful toll around the world. Alone among the new diseases of the last 50 years, it has taken a place with malaria, influenza, bubonic plague, and the handful of other ailments with death tolls in the millions.

AIDS' devastation is nowhere more obvious than in sub-Saharan Africa, where poverty and lack of access to health care -- among many other factors -- have allowed the disease to spread unchecked through country after country.

But there is a small bit of good news. A number of organizations, including Earth Island Institute's Global Service Corps, are taking innovative steps to mitigate the worst aspects of AIDS. By helping affected communities ensure a supply of locally-grown nutritious food, GSC and its colleagues are hoping they can delay the progression of AIDS in people with little access to sophisticated antiviral therapies. With luck, these groups might help some of the ill buy time until a cure is found.

Staggering loss of life

The UN estimates that 42 million people worldwide were infected with the human immunodeficiency virus (HIV) -- the virus that causes AIDS -- at the end of 2002. In that year, 3.1 million people died of AIDS, bringing the disease's total worldwide mortality to 28 million.

In this era in which the death toll from a single storm can reach into the tens of thousands, it might be helpful for the reader whose eyes glaze over at mortality numbers to find a measuring rod to tell us just how big a crowd 28 million people is. It's the total population of Canada, for instance. Or California. If that many people jogged single-file past you at one per second, the last person would go by a bit more than 46 weeks later. If you were to design an AIDS memorial similar to the Vietnam memorial in Washington DC, you would need black marble walls 22 miles long to hold the names of all the dead.

Here's another fact about the number 28 million: that's how many people in sub-Saharan Africa are now infected with HIV, according to best current estimates. Seventy percent of HIV-infected

people live in Africa, mostly south of the Sahara. The prevalence of AIDS isn't a tragedy just for people who are infected: the disease erodes the very economic underpinnings of affected African societies.

In the US and other wealthy countries, the ill have better access to tools to cope with the virus: antiretroviral drug therapies and treatments for opportunistic infections; doctors, clinics and hospitals; clean drinking water; and healthful food. By working with a doctor on a drug regimen, eating nutritious food and exercising, while engaging in basic sanitary practices, HIV-infected people in the developed world can live with the virus for years.

But in the developing world, it's much harder to appeal AIDS' death sentence. Pharmaceutical companies are only lately beginning to make antiretroviral drugs available at near-cost prices in poor countries, and even then, the drugs are priced well out of reach of many. In Africa, where women may walk for miles each day to get to the nearest well or stream, clean water for drinking -- let alone washing -- is often a rarity. Thus proper nutrition is sometimes the only defense Africans have against HIV once infection occurs. And in much of Africa, getting a nutritious diet might be easier said than done. "The nutritional aspect of HIV/AIDS has been ignored for a long time," says Kraisd Tontisirin, director of the Food and Agriculture Organization's Food and Nutrition Division. "The attention was always focused on drugs. The message was always 'take two tablets after meals,' but they forgot about the meals."

Feed a virus

While adequate nutrition is important in fighting just about any disease from the common cold to cancer, it's especially important in managing AIDS. People who just don't get enough to eat suffer lowered T-cell counts, impaired antibody function and altered serum immunoglobulin levels -- pretty much the same effect HIV has on the human body. Even before HIV infection develops into full-blown AIDS, the virus seems to deplete the body of thiamine, riboflavin, B6, B12, and folate, vitamins whose deficiencies impair disease resistance.

Once symptoms develop, proper nutrition becomes ever more important -- and ever more difficult. Cytomegalovirus, a usually benign pathogen found in billions of people around the world, can run rampant in AIDS sufferers, interfering with absorption of nutrients from the gastrointestinal tract. The HIV-linked cancers lymphoma and Kaposi's sarcoma similarly interfere with the normal digestive process. The more sick an AIDS patient becomes, the more likely he or she is to have severe nausea or diarrhea, obvious impediments to extracting the maximum possible nutrition from food. This becomes especially problematic as AIDS increases susceptibility to food-borne pathogens. Slightly tainted food that most of us could eat with little ill effect could be deadly to someone with a compromised immune system.

The result? AIDS-related wasting, also known as loss of lean body mass -- the non-fatty tissues we rely on for almost every bodily function from walking to the store to pumping blood and breathing. As you lose mass from your muscles and internal organs due to AIDS-related wasting, your body has more and more difficulty staving off the advance of the virus, and you get sicker, which keeps you from eating and reduces the efficiency with which your body can use the food you do eat, so that you lose more mass. When this vicious cycle depletes about half your ideal lean body mass, you die. Infectious disease expert

Richard Beach, MD, puts it bluntly. "Most people who die of AIDS actually die of starvation."

Feeling down on the farm

In sub-Saharan Africa, where most people work in the agricultural sector, the structure of society speeds up the vicious cycle of illness and wasting.

Farm work is hard work, especially without access to large machinery. If a family member is too ill to work productively, there's less food for the entire family -- whether the food is grown on-site or bought with the proceeds of cash crop sales. When labor is scarce, many African farmers will start growing less labor-intensive crops such as cassava. This saves work, but cassava, whose edible part is essentially pure starch, provides far less nutrition than the maize or legumes grown when times are better. Thus, the food supply dwindles, and the hardship crops that farmers manage to grow are far less nutritious. Even healthy community members suffer the effects of malnutrition, making them much more susceptible to HIV infection.

Most food grown in sub-Saharan Africa isn't intended for household consumption, but as cash crop for domestic sales or export. After two generations of Green Revolution export-based agriculture, many farmers no longer know how to grow anything other than the one or two crops they sell. And as the agricultural labor pool dwindles due to AIDS, government revenues from the agricultural sector dwindle, so that local governments may increasingly have trouble helping the ill.

Global Service Corps

When Rick Lathrop was pursuing doctoral studies at the Fielding Graduate Institute in Santa Barbara he became interested in the need to address a growing disparity between global "haves" and "have-nots."

In 1993 he founded Global Service Corps (GSC), a "mini Peace Corps" volunteer service-learning organization focusing on supporting small-scale sustainable development projects in developing countries. In December 1993, in GSC's first project, volunteers traveled to Costa Rica to work on rainforest conservation in that country's spectacular nature reserves. GSC soon expanded, sending volunteers to work on conservation and social justice projects in Kenya and Thailand.

GSC became a project of Earth Island Institute in 1995, a year after it launched a program in Kenya focusing on training in Bio-Intensive Agriculture (BIA), which emphasizes intensive growing of locally available food crops in double-dug growing beds, a practice that allows much higher yield per acre of production than standard industrial planting, often with less effort on the part of the farmer. The small scale of the beds makes large machinery unnecessary, composting and recycling of local agricultural wastes allow farmers to avoid buying expensive chemical fertilizers, and a diverse crop cycle minimizes the insect infestations common to large monocultural plantings, cutting down on the need for pesticides.

Over the next seven years, participants in GSC's program traveled to Kenya, stayed with families in Mumias, Kibwezi, and Machakos, and conducted classes and workshops, inspiring thousands of small farms to adopt BIA practices. Lathrop traveled often to Kenya, soon becoming aware of

the growing African AIDS pandemic.

In 1994 GSC launched an HIV/AIDS prevention education project. In 2001, GSC moved on to Tanzania, an ideal place to continue the BIA program. Eighty percent of the country's population is rural: of that 80 percent, nine-tenths are employed in the agricultural sector. Most farms in the country are small, about one and a half acres.

Tanzania also needed help in preventing the spread of AIDS. One in 12 Tanzanian adults is HIV-positive: a total of 1.2 million people are affected, 670,000 of them women. As horrifying as these numbers may seem, the situation in neighboring countries is far worse: Tanzania has one of the lowest HIV incidence rates in sub-Saharan Africa. Still, AIDS-related labor shortages have seriously limited food availability in many parts of the country, in an agricultural economy already reeling from periodic droughts, flooding, and inefficient transportation. As much as 70 percent of produce is grown by women, making the higher infection rates among female Tanzanians women especially troubling.

Tanzania, like most other rural countries, is plugged solidly into the global economy, and many farmers rely on the global markets for their livelihoods. Coffee has been a major historic export. When the global price of coffee plummeted in the 1990s, many Tanzanian farmers couldn't earn enough to cover production costs. Many plantations were abandoned; other farmers sought alternatives that would pay the bills and allow them to feed their families. Vegetables are a popular alternative crop, but as traditional horticultural knowledge has been lost in many villages, farmers are often forced to rely on Green Revolution-style chemical pesticides and fertilizers.

Lathrop, a former organic farmer, says Tanzanians hunger for alternatives and are especially happy to get advice from North Americans. "For better or for worse, we're seen as the experts, even though we might have Tanzanian partners with more agricultural knowledge. The farmers we're talking to are intelligent and practical businesspeople, and Americans are seen, if nothing else, as educated and successful entrepreneurs."

On arrival in Tanzania, GSC participants work with their host communities to conduct trainings, sharing information on BIA methods and learning from community members which crops will work best locally.

Then the hard work begins, as GSC participants work with their hosts to apply their new knowledge, digging and then planting BIA farming plots. The produce is sold for cash income, or consumed by local households, or both, bringing villagers battling HIV -- and their neighbors -- a more reliable source of balanced nutrition.

But better nutrition merely slows the virus's rampage through the body. In the absence of a cure and with access to antiretrovirals limited by economics, prevention is still the best method of controlling HIV-related devastation. And as in many other countries, Tanzanians often hold potentially deadly misconceptions about HIV and its spread. GSC volunteers have been working to improve the state of AIDS education in Tanzania by holding workshops, classes, and public events to give locals accurate information on HIV, and to challenge myths and destructive

practices that contribute to its spread.

A report on a series of seminars GSC held at the Tanzanian Ministry of Agriculture's Training Institute (MATI) at Tengeru in 2002 illustrates some of those practices. Ritual circumcision, often carried out in secret with unsterilized implements, is a major concern. So is the practice of "widow cleansing," in which the brother of a dead man marries his widowed sister-in-law -- an obvious problem if his brother died of AIDS. Reluctance to use condoms and the notion that a healthy-looking potential sexual partner won't have HIV are other factors. Before the seminar, participants were quizzed on basic HIV facts, with the quiz repeated after the workshops. The retesting showed that nearly 85 percent of those in attendance had learned how to incorporate safer hygienic practices into their lives, and gained important information about the links between AIDS and nutrition.

Lathrop says GSC's goal is not just to teach Tanzanians a set of facts and figures about HIV, but to help them acquire the tools they need to think critically about the disease. GSC volunteers provide that help. As one volunteer put it, "In the end, we need to help people be able to make informed decisions. We can't be there every time our students hear a new myth or story about the disease. What we can do is help them to think rationally about HIV and AIDS, so that they can determine for themselves if what they are hearing is true." Until a cure is found, that capacity for critical thinking -- and a bigger ration of fresh vegetables -- is, thanks to GSC volunteers, something at least a few Tanzanians can count on to fight AIDS.