AIDS Brings in its Wake a Global Economic Disaster

by Md. Asadullah Khan

AIDS crisis that looms up outside the frontiers of Bangladesh has already alarmed conscious citizenry. Unless effective steps are taken to curb the spread of this scourge through education and dissemination of information the country may suddenly find itself in a very vulnerable situation grappling with serious economic problems beyond repair.

STATISTICS on the world wide spread of AIDS have really been horrifying. Data released by the researchers working for the United Nations indicated that at least 30.6 million people were living with the HIV in the last part of 1997 and the number peaked at 47 million by December 1998 of whom 14 million have died. Last year saw the biggest annual death toll yet : 25 million. The disease now ranks fourth among the world's big killers after respiratory infections, diarrhoeal disorders and tuberculosis.

The human immuno-deficiency virus (HIV), which causes acquired immune deficiency syndrome (AIDS) is thought to have crossed from chimpanzees to humans in the late 1940s or early 1950s in Congo. It took several years for the virus to break out in Congo's dense and sparsely populated jungles but once it did, it marched with rebel armies through the continent's numerous war zones, rode with truckers from one rest-stop brothel to the next, and eventually flew, perhaps with an air steward, to America where it was discovered in the early 1980s. As American drug injectors and homosexuals started to wake up to the dangers of bath houses and needle sharing, AIDS was already devastating Africa. As UN AIDS report suggests, each day more than 20,000 people contact HIV — nearly double the previous estimate of the infection rate. The report further delivers a bleak message about the world's widening AIDS gap between rich and poor countries in the fight against this epidemic. Ten thousand dollars per person is the price of a twelve-month course of triple drug therapy of the much-vaunted protease inhibitors that have been rolling out of pharmaceutical company doors over the past few years. But such a course is not a cure for AIDS but it stops HIV, the AIDS causing virus, from replicating inside a human body and thus restores the body to health. Largely as a result of triple-therapy, the number of people suffering from AIDS in North America and Europe is dropping fast. As a matter of fact, US. AIDS deaths dropped by 19 per cent in 1997 and new cases in Europe are expected to drop by 30 per cent. In France the decline was greater, at some 25 per cent .

Comparing this figure with Sub-Saharan Africa one would have the deepest shock. Taking into account the fact that AIDS is spreading in India, China, Southeast Asia and Latin America, it is Africa that accounts for the largest chunk of infection. "We are now realizing that the rates of HIV transmission have been grossly underestimated particularly in Sub-Saharan Africa where the bulk of infections have been concentrated, says Peter Piot, head of UNAIDS. So far, the worst hit areas are east and southern Africa. In Botswana, Namibia, Swaziland and Zimbabwe, between a fifth and a quarter of people aged 15-49 are affected with HIV or AIDS.

In Botswana, children born early in the next decade will have a life expectancy of 40; without AIDS it would have been nearer 70. Of the 25 monitoring sites in Zimbabwe where pregnant women are tested for HIV, only two in 1997 showed prevalence below 10 per cent . At the remaining 23 sites, 20-50 per cent of women were infected. About a third of these women will pass the virus on to their offsprings. The reason : voluntary testing is so rare , at least 90 per cent don't even know that the virus is lurking in their body fluid. The fact is that they spread the disease unknowingly.

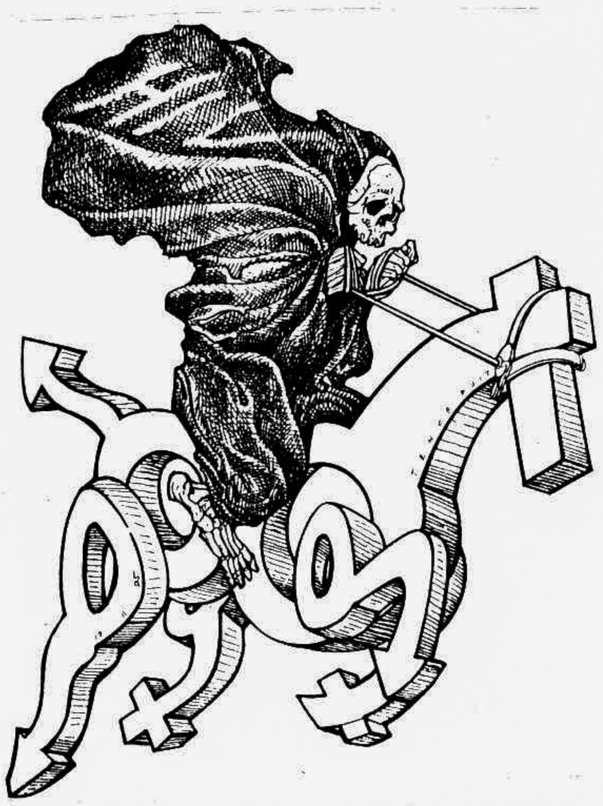
Unsurprisingly, by the middle of the next decade, death figures with infection in AIDS will probably be third. At the beginning of 1998 more than 30 million people, about 0.5 per cent of the earth's population were infected with HIV even though most of them had not yet developed the symptoms of AIDS.

Moreover in parts of the planet — particularly parts of Africa — the numbers are much more worse. In Zimbabwe and Botswana, for example, a quarter of the adult population is infected. Unless there is an unforeseen breakthrough in treatment, almost all of these people will eventually develop AIDS and die from it. As a result the life expectancy of the average Zimbabwean having risen steadily until 1990, when it was 56 years, is likely to fall to only about 40 by the end of the century. That of a Bostwanean will have fallen by a decade (see chart).

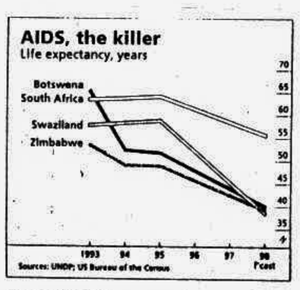
At least as worrying, from a global perspective, is that the virus is now spreading into areas that were previously AIDS-free. In some of the former communist countries of Europe, rates of HIV infection have risen several hundred-fold over the past three years. And in China where HIV was until recently confined to the south-west and the coast, every province has now registered people with the virus.

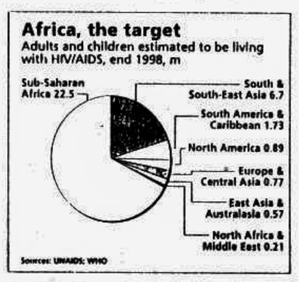
South Africa, once known for its affluence, was largely protected by its isolation from the rest of the world during the apartheid years. Now it is host to one in ten of the world's new infections--- more than any other country. In the country's most populous province Kwa-Zulu-Natal, perhaps a third of sexually active adults are HIV positive. Shockingly, since 1991 the rate of HIV infection among pregnant women, who are considered roughly representative of the economically active population, has spiralled from 1 per cent to a staggering 14 per cent , according to the Department of Health's annual ante-natal survey. Within the next five to ten years, say some estimates, the figure will reach one in four, and by 2010 life expectancy could fall from 63 to just 40 years.

Asia is the next disaster-in-waiting. Already seven million Asians are infected. India's 930 million people look increasingly vulnerable. A recent study in Tamil Nadu found over 2 per cent of rural people to be HIV positive : 500,000 people in one of India's smallest states. Since 10 per cent had other sexually transmitted diseases (STDs), the avenue for further infection is clearly open. A survey of female STD patients in Poona, in Mahrashtra, found that over 90 per cent had never had sex with anyone but their husband and yet 13.6 per cent had HIV. Child victims are horrifying new face of AIDS in India. And a worrying number of cases are being reported at the major paediatric hospitals in places such as Bombay and Madras. Says Gita Bhave, in charge of the AIDS surveillance centre at the KEM Hospital in Bombay : "In the past two years we have found that 80 per cent of the 1300 cases where parents had registered as HIV positive, the children too have been infected. Dr. Suniti Solomon, Director of the Centre for AIDS Research and Education, Madras says that 22 out of the 250 HIV positive patients at the centre are children below 12 years, most of them from lower and lower middle income groups. The story does not end there. Subhas Hira, a professor of infectious diseases at the university of Texas who had been monitoring the spread of HIV infection in India till 1996 says, "Till September 1995, 2.5 per cent of the pregnant women at the JJ Hospital in Bombay tested positive, which is very serious".



The consequence of this rise is especially grave for the offsprings of infected mothers. The National AIDS Control Organisation in India estimates that 30 per cent of the HIV infected women are passing on the infection to their children.





Carol Larivee, WHO's health education specialist, paints an even darker picture. "In the decade ending 2000", she warns, "AIDS will single-handedly negate the advances made to date on maternal and child health".

Speaking about India where the virus, it is now learnt, is lurking in about 1.5 lakh adults, it is only now that the awareness is increasing on the danger of unborn child. Children usually get infected in the womb. In many parts of Asia, specially in India, they also contact the disease through breast feeding, blood transfusions and sexual abuse.

No one knows, what AIDS will do to poor countries' economies, for nowhere has the epidemic run its course. An optimistic assessment, by Alan Whiteside of the university of Natal, suggests that the effect of AIDS on measurable GDP will not be that much appreciable. This is because so many people in poor countries do not contribute much to the formal economy. Interpreting it in a much simpler way, where there is a huge oversupply of unskilled labour, the dead can be easily replaced. Some people argue that those who survive the epidemic will benefit from a tighter job market. After the "Black Death" (plague) killed a third of the population of Medieval Europe, labour scarcity forced landowners to pay their workers better.

But the majority of the researchers are most pessimistic. AIDS takes longer to kill than did the plague. Consequently the cost of caring for the sick will be more crippling. Governments in all the countries at the present moment unlike the medieval ones, tax the healthy to help look after the ailing, so the burden will fall on everyone. And AIDS because it is sexually transmitted, tends to hit the most energetic and productive members of the society. A recent survey in Namibia estimated that AIDS cost the country almost 8 per cent of GNP in 1996. Another analysis predicts that Kenya's GDP will be 14.5 per cent smaller in 2005 than it would have been without AIDS, and that income per person will be 10 per cent lower. And that's the most realistic picture one can envision in the days to come.

In general the more advanced the economy, the worse it will be affected by a large number of AIDS deaths. South Africa, with its advanced industries already suffers a shortage of skilled manpower and cannot afford to lose more. In better-off developing countries, people have more savings to fall back on when they need to pay medical bills. Where people have health and life insurance, those industries will be hit by bigger claims. Insurers protect themselves by charging more or refusing policies to HIV positive customers. In Zimbabwe, it is now learnt, life insurance premium quadrupled in two years because of AIDS. Higher premiums force more people to seek treatment in public hospitals: in South Africa HIV and AIDS could account for between 35 per cent and 84 per cent of public health expenditure by 2005, according to one projection.

Precisely true, little research has been done into business and economy but the evidences surrounding AIDS are really scary. In some countries firms have had to limit the number of days employees may take off to attend funerals. Zambia is suffering from power shortages because so many engineers have died. Farmers in Zimbabwe are finding it hard to irrigate their fields because the brass fittings on their water pipes are stolen for coffin handles. In South Africa, where employers above a certain size are obliged to offer generous benefits and paid sick leave, companies will find many of their staff, as they fall sick, becoming more expensive and less productive. Yet few firms are trying to raise awareness of AIDS among their workers or considering how they will cope.

In the public sector, where pensions and health benefits are often more generous, AIDS will break budgets and hobble the provision of services. In South Africa an estimated 15 per cent of civil servants are HIV positive but government departments have made little effort to plan for the coming surge in sickness. Education too will suffer. In Botswana 2-5 per cent of teachers die each year from AIDS. Many more take extended sick leave.

At macro level, the impact of AIDS is felt gradually. But at household level, the blow is sudden and catastrophic. When a breadwinner develops AIDS, his (or her) family is impoverished twice over : his income vanishes, and his relations must devote time and money to nursing him. Daughters are often forced to drop out of school to help. Worse, HIV tends not to strike just one member of a family. Husbands pass it on to wives, mothers to babies. As one correspondent monitoring HIV and AIDS affliction cases in Kampala reports a grim tale : his driver in Kampala lost his mother, his father, two brothers and their wives to AIDS. His story is not rare throughout the length and breadth of Africa and Asia.

AIDS is spread by sex and drugs. That makes politicians nervous. The more moralistic of them reckon that the disease would go away if only people would be sexually faithful and refrain from injecting themselves with drugs.

These politicians are right, in principle, of course. But in practice anti-AIDS policies based on exhorting people to behave better have, without exception, failed. In contrast, policies that recognise human frailty and try to ameliorate it seem to succeed. People cannot easily be persuaded to give up their sexual and pharmaceutical habits. But they can be persuaded to use condoms and clean needles, particularly if these are made freely or cheaply available. And, contrary to the fears of some puritanical politicians, providing ways to make the habits they disapprove of as safer does not seem to tempt others to try them out.

One of the most successful anti-AIDS campaigns waged outside the West has been in Senegal. Senegal reacted swiftly to the appearance of AIDS, starting its counter-attack in 1986, before the disease could get a grip. The country is predominantly Islamic and residually Catholic, so the government sought to head off potential opposition from religious leaders to the sometimes sexually explicit messages that an anti-AIDS campaign must often broadcast, by seeking their support from the beginning. Sex education in schools was made universal. The "social marketing" of condoms (i.e., their sale at heavily discounted prices) became widespread. People at particular risk of contacting and transmitting the disease, such as prostitutes and their clients, were made the focus of attention. And the government drove the message home among the one group of young, sexually active men over whose lives it had almost complete authority — the army.

A recent survey suggests that the campaign has, indeed, changed the behaviour of Senegal's youth. It has not done so, however, by imposing monogamy on them. According to the survey, 43 per cent of men between 15 and 24 said that they had casual sex in the previous year. So did 15 per cent of women in that age group. But more than 60 per cent of women and 40 per cent of men claimed they had used a condom in their casual encounters — a claim backed up by the fact that condom sales have risen from 800,000 to 7m a year over the past decade. Presumably as a result, Senegal's rate of HIV infection has remained below 2 per cent, compared with around 13 per cent in nearby Cote d'Ivoire.

The main obstacle in curbing the spread is not technical, but cultural : the tyranny, familiar across Africa, of denial and taboo. Even in Zimbabwe, where several prominent figures, including government ministers, have died after contacting AIDS, the real cause of death is kept secret. "There is consistent denial here by our government," says Marvellous Mhloyi, a demographer at the University of Zimbabwe in Harare. "When we leave burial places, we cannot even say it was AIDS. We just say he died from a short illness."

AIDS is all the easier to conceal since death is caused by the body's failure to resist other disease. South Africa, for example, is currently undergoing an epidemic of tuberculosis--- but the fact that over a quarter of TB deaths are related to HIV infection is often ignored. It is also hard to prevent in countries where polygamy is still practised. Black South African women say that it is difficult to persuade their menfolk that a monogamous relationship, or the use of condoms, is not an infringement of their masculinity.

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The Ozone Story

by Sarwat Chowdhury

The history of the Ozone regime was a good learning tool for not just environmentalists but multinationals as well (the latter have become much more sophisticated in their opposition to climate change related efforts). It would also be prudent to remember that, the Montreal Protocol itself continues to encounter major implementation challenges.

STRATOSPHERIC ozone protects the Earth's atmosphere by shielding the planet form damaging ultraviolet radiation. The atmospheric layer closest to the Earth's surface, known as the troposphere extends up to 10 kilometers. The next layer known as the stratosphere ranges from 10 km to approximately 50 km and the ozone is located in this layer.

Certain industrial chemicals including chloroflurocarbons (CFCs) and methyl bromide (a lethal pesticide used in crops) can exhaust the ozone layer.

Defining Ozone Hole, and Ozone-depleting Compound (ODC): In usual scientific practice, the concentration of chemical compounds in the atmosphere is often shown by generating maps on which lines of equal concentration are traced. Therefore, low values may appear as valleys whereas high concentration values can appear as hills. While conducting similar mapping over the Antarctic for a few years, a deepening hole in the ozone concentration became apparent. This hole does not refer to a complete lack of ozone over this part of the earth, however the seasonal depletion over the southern pole does indicate a sharp thinning in the ozone layer. Ozone-depleting compounds (ODC) are used as solvents, in refrigeration as well as in the production of insulation and foam.

An Abridged Version of the Ozone Hole Story: As early as 1974, chloroflurocarbons were suspected to contribute to ozone depletion. That year, Mario Molina, and Sherwood Rowland of the University of California at Irvine outlined the magnitude and mechanisms of ozone loss (actually Molina and Rowland were awarded the Nobel Prize in chemistry in 1995 for their contribution in the formation and decomposition of ozone.) In 1975, United Nations Environment Programme (UNEP) took the first step in introducing the issue of ozone depletion to the international arena by funding a study by the World Meteorological Organization (WMO).

In the beginning, the international chemical industry vehemently denied any connection between the ozone hole and the increasing sales of CFCs, and mobilized efforts to cast doubt on the theory. The United States, which accounted for 30 per cent of the worldwide production of CFCs, was forced to take a leading role in regulating CFC, mostly because of domestic pressures. In fact, a ban was imposed on use of CFC in aerosol cans as early as 1978. Similar bans were imposed in Sweden, Norway, and Canada. However, the use of ODCs for other purposes such as air conditioning, foam production, and cleaning solvents continued to grow in the US.

According to some researchers, fact-finding on the ozone depletion issue was prolonged because scientific estimates of the likely depletion fluctuated during the late 1970s and early 1980s. Others claim that changed situation e.g. election of Ronald Reagan as US President was a taken as a signal by the corporations that existing regulations would be relaxed, and new regulations will probably not be imposed (Makhijani and Gurney 1995). This provided an impetus to the European counterparts to abandon their research initiatives as well. In 1985, the Vienna Convention for the Protection of Ozone Layer was held and basically resulted in an agreement to cooperate on monitoring, research and data exchanges. However, no binding obligations to reduce ODCs were achieved. Then in 1987, the landmark treaty of Montreal Protocol on Substances that Deplete the Ozone Layer was finalized. In this treaty, industrialized countries pledged to decrease CFC production by 50 per cent of 1986 levels by 1999.

Significant Discoveries after the Montreal Protocol: By 1986, important discoveries were made based on an integrative research of 150 scientists and was published by the WMO and UNEP. One of the major findings of the activity was: accumulations of CFCs 11 and 12 in the atmosphere had nearly doubled in the atmosphere from 1975 to 1985. The study also showed that ozone layer was threatened not only by CFCs 11 and 12, the original scientific focus of the international community, but also by other compounds such as CFC 113, 114, 115, two bromine compounds, halons 1211 and 1301 (Benedick 1998).

Coincidentally in 1985, British scientists working on a review of land-based measurements of stratospheric ozone in the Antarctic released their astounding findings: ozone levels recorded during the Antarctic springtime had declined about 50 per cent compared to the level in the 1960s. This surprising revelation was then checked and confirmed by the US and Japanese scientists. The 1988 report by 100 leading atmospheric scientists established that the Northern Hemisphere ozone layer had also been depleted up to 3 per cent between 1969 and 1986. Following such results, DuPont, the world's largest manufacturer of ODCs, resumed more serious research on alternative chemicals to ODCs.

Cynics argue that such efforts were not driven by any altruistic motive or even the will to internalize the environmental, social and economic costs caused by the use of their products. The incentive is thought to be the looming reality that the discovery of ozone hole would lead to strict restrictions of ODC production and consumption.

London and Copenhagen Amendments to the Montreal Protocol: As more evidence of the ozone layer depletion became evident, in March 1989, the European Union decided to phase out all CFC production by the year 2000. The Montreal Protocol was strengthened further in the 1990 London agreement. The 1992 Copenhagen agreement accelerated the ban on all CFCs and also added hydrohlorofluorocarbon (HCFC) to the chemicals to be phased out. The 1993 Bangkok meeting of the parties agreed on the need to strengthen the treaty by phasing out methyl bromide (the second most widely used insecticide in the world by volume).

The Ninth Meeting of the Parties to the Montreal Protocol (September 1997): The scientific assumption of the Protocol since 1994 is that ozone depletion will peak in the late 1990s and will return to benign levels by 2045. This standard projection is based upon calculations laid out in the Scientific Assessment of Ozone Layer Depletion (1994), which among other things, assumes that CFC production in 1997 would equal roughly double the total production of developing countries in 1992, and further, that all production would end by the year 2006.

Unfortunately, there still remains an excess production of CFC in the world. Refrigerator and air conditioning manufacturers are still selling CFC-dependent systems in developing countries, despite the imminent demise of this chemical. Black market demand in industrial countries, especially the US, is also boosting production levels. The export of used equipment from industrial to developing countries is further enhancing CFC-dependency and demand in the developing world.

The CFC Black Market: Since late 1994, US government agents are reported to have targeted dozens of companies for investigation and impounded thousands of cylinders of illegal CFCs. The Washington D.C. based non-profit public interest group, Ozone Action's analysis of shipping records revealed a potential black market in CFCs in 1994 of more than 22,000 tons, with suspicious shipment in 1995 of approximately 10,000 tons per year. Ironically, there is also a legal CFC market in the United States. Production of CFC is allowed for export to developing countries or "essential use" within the US. Under US law, companies may produce more than 100,000 tons of new CFCs a year from 1997 to 1999 and more than 50,000 tons per year from 2000 to 2005.

Ozone Action calls for a complete ban on the production, import, and export of CFCs in the United States. The only exception could be in essential use like asthma inhalers. As mentioned earlier, all of the projections for ozone layer recovery are based on assumed compliance with the amended Montreal Protocol (Copenhagen, 1992) by all nations. However, the combination of legal CFC production and black market CFC trafficking violates the spirit of the Protocol and also gives rise to North-South tensions. For example, huge corporations like DuPont, Allied Systems are thought to be continuing their CFC production in developing countries by taking advantage of loopholes in US law and international regulations.

A few years ago, India's Environment Ministry accused western governments of waging a campaign for "eliminating competition from (developing) countries and handing over the developing countries' market for ozone depleting substances on a platter to multinational companies of developed countries." (John Passacantando, Ozone Action)

Linking Ozone Depletion with Climate Change: Climate change can exacerbate the ozone depletion problem. Depletion of ozone is more severe when the stratosphere becomes colder. Since climate change traps heat in the troposphere, less heat reaches the stratosphere. In other words, climate change could make ozone depletion much worse exactly when it is supposed to begin its recovery during the next century.

Human Health and Related Environmental Effects of the Two Global Phenomena: Both ozone depletion and climate change have harmful effects on plants and animals. In every ecosystem, plants and animals are linked together by feeding relationships into food chains and food webs. The food chain will be seriously disrupted with both problems. In areas where ultraviolet B (UV-B) radiation is more intense, phytoplankton (a key building block to oceanic marine life) productivity is significantly lower (between 6 and 12 percent) and zooplankton (which feed on phytoplankton) also appear to be affected by UV-B (T.E. Graedel AT&T Bell Laboratories; Paul Crutzen, Max Planck Institute for Chemistry). Such findings are significant since human beings derive almost 30 percent of their animal protein from the ocean To go back to the issue of food chains, since UV-B harms the productivity of phytoplankton, it reduces the available food for animals that feed on phytoplankton. For example, krill eat phytoplankton and penguins eat krill. From a climate change perspective, phytoplankton normally absorbs a significant amount of carbon from the air. When it is killed off by UV-B radiation, it cannot take in the carbon as usual.

Therefore, more carbon would be left in the atmosphere resulting in greater climate change. More climate change means more ozone depletion which again causes the death of more phytoplankton, and the process thus repeats itself.

Studies in Ohio indicate that exposure to UV-B radiation causes damage to white pines and hardwood forests. Particularly vulnerable are seedlings and new growth on trees (Dr. Orie Loucks, University of Miami). UV-B also appears to harm amphibian eggs, midge larvae and trout. Biologists with the National Biological Survey have found that trout, particularly rainbow trout in their first year (juveniles) can be killed by excessive UV-B radiation exposure (Dr. David Fabacher, National Biological Survey). In another study of 200 plants examined for sensitivity to UV-B, approximately half demonstrated significant adverse effects including reduced leaf area, shoot length and ability to photosynthesize.

In terms of direct human health effects, the relationship between increased UV-B radiation and skin cancers and cataracts is almost well known. According to Costanza et al., every 1 per cent decrease in the ozone layer results in 5 per cent more of certain skin cancers. Again, research from the United States Environmental Protection Agency and United Nations Environmental Programme suggest that UV-B radiation suppresses the immune system of animals and human-beings (even if one has darker skin pigmentation or uses sunscreens).

Critical Policy Issues: Research indicates that the approximately one million tons of CFCs dumped into the environment each year takes about 10 years to reach up to the ozone layer. They cause the destruction of the ozone layer with a half-life of about 100 years. Therefore, today's damage reflects only the relatively low levels of CFCs released during the early 1980s. Basically, even if the CFC emissions were to cease completely today, our planet will have to deal with 10 years of increased damage, and then return to the pre-damage levels over the next century!

The primary threat to the Montreal Protocol is the continued and excess production of ozone depleting substances. Traditional producers of the most significant ozone destroyers — CFCs — are still in business making these chemicals in Mexico, Brazil, the Netherlands, and some other places. Russia is believed to be a major source of illegal CFC. The World Bank is urging industrial countries to help fund the conversion of Russian CFC production plants to ozone-friendly alternatives (Vital Signs 1998). The cost of complying with the Montreal Protocol is now calculated to be $235 billion where as it could save the earth some 19.1 million cases of non-melanoma skin cancers through 2060 and at least $459 billion in damages to fisheries, agriculture, various building materials (Environment Canada 1997).

Two major challenges for the future of the ozone hole issue include: phasing out deadly methyl bromide (40 per cent of the global usage is actually in the United States), and hydrochloroflurocarbons (HCFC) which are only interim substitutes for CFCs. Innovative approaches towards phasing out HCFC s (which are harmful to the ozone layer to a lesser extent, but its uncontrolled usage can spell disaster nonetheless) have already begun in Europe. For example, the environmental group Greenpeace successfully introduced in Germany and popularized all over Europe "Greenfreeze" refrigerators which are based on hydrocarbon as opposed to HCFC.

However, at the Ninth Meeting of Parties to the Montreal Protocol held in Montreal, September 1997, the United States delegation, joined by Canada and some developing countries, defeated a motion led by the European Community (E.C.) to push forward the phase-out of HCFCs in industrial countries from the year 2030 to 2015. The European Community's push was based on the easy availability of non-depleting substitutes for HCFCs, and recent evidence that many HCFCs are acutely toxic to people who are regularly exposed to them. The European Community then charged the US with working on behalf of chemical companies with vested interests in these chemicals!

While CFCs are mainly released by the industrial North, the ozone hole that was first detected was in Antarctica was about 20 kilometers up in the atmosphere — revealing the genuinely global nature of the problem.