



World Ecology Report

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SPECIAL FOCUS

Youth Can Make a Positive Difference

Special
Issue

This issue of the *World Ecology Report* contains the second installment of papers and abstracts presented at WIT's Ninth International Conference on Health and Environment: Global Partners for Global Solutions on the theme of "Solutions for the Millennium." We focus here on the importance of listening to young people and hearing what they have to say about solving global problems. WIT recognizes that while many young people are actively working toward positive change, many others are deeply concerned, but not have taken steps towards making a difference. Most important, are the legions of young educated people whose lives are comfortable but who have not yet taken an interest in global issues. The message of our Special Focus is that each young person is important to the global community. Each young person whose basic needs are fully met can make a contribution, and in fact has the responsibility to do just that.



United Nations, April 28, 2000

Tolerance, Ambition and Responsibility

Statement by James Van Der Beek, American television and film star, on the occasion of the Ninth International Conference on Health and Environment: Global Partners for Global Solutions, United Nations, New York, April 28, 2000

You may have noticed from the program that there are no acronyms either before or after my name. This is because I am a college drop out. I spent two years at Drew University, majoring in English and Sociology before leaving to take a job

in Wilmington, North Carolina. I grew up in a small Connecticut suburb where as a child I contemplated careers in either major league baseball or physical therapy...So why am I here? Well, the job for which I recklessly abandoned my studies was a television show...Out of the 156 shows that year, mine ranked 121st in total viewers. Again you are probably wondering why am I here? I am here because that same year, *Dawson's Creek* was the most watched show on television among teenagers...more teenagers watched *Dawson's Creek* that year than any other show on television, and one and a half years later I have a movie career, *Dawson's Creek* is broadcast worldwide, and I have been asked to speak at the UN. So because the youth of America has pretty much purchased my ticket to this event, I

thought that it would be only appropriate that I represent them here today and pass along the meager amount of wisdom that I have acquired in my 23 years on this planet.

Let me first say that I am I'm thrilled to be a part of my generation, and I count myself very lucky to be young at this particular point in history. An arbitrary tick of the clock has prompted everyone to look back at the past millennium with the clarity granted only in hindsight and ahead to the next thousand years with vision, purpose and hope. Y2K became something to laugh about...and my generation witnessed a New Year's celebration untarnished, for the most part, by terrorist activity. A stellar example...

I represent a generation that is better educated than any other...We were raised on the technology that will inevitably shape future innovations, better access of information and by virtue of the Internet we also have a strong global consciousness that has not been forged by war or propaganda. The time is ripe and our potential is infinite...But as any parent or teacher will tell you with potential comes responsibility, responsibility to ourselves and I think to a greater good.

America watched in horror last April, as news broke out that two Colorado teenagers had marched into their high school cafeteria and carried out a shooting rampage they had planned for over a year. The nation collectively shook its head and asked WHY—how could this have happened. What could have caused such a senseless tragedy. And the media answered back with eloquent dissertations on a violent society, music, movies, video games. Everything was blamed from pre-existing psychological conditions, to the trench coats that they wore.

Such reporting is of course the media's job, but two erroneous messages were unwittingly send out:

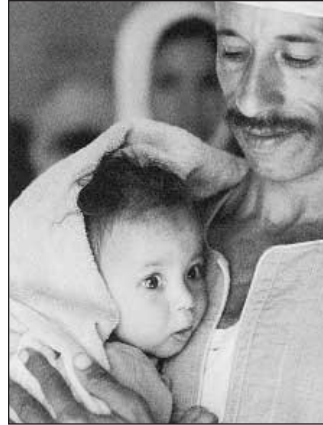
1. The tragedy at Columbine is symptomatic of some sort of societal defect. The murderers themselves were not to blame. The two boys who pulled the triggers were entirely responsible for what they did. They chose their path and no excuse can be made for them.

2. The two selfish cowards can hardly be considered indicative of a community much less a generation.

What I saw in the wake of Columbine, a community mourning together, is students courageously telling their story and the outpouring of shock, sympathy and support from high schools from all over the nation. That is indicative of a generation of which I am proud to consider myself a part.

So what pitfalls do we have to watch out for...I can't help but wonder if the British historian Mr. (Arnold) Toynbee had a point that "necessity is the mother of invention"...If necessity is the mother of invention what becomes of the prodigy who wants for nothing?

I think that it is safe to assume that everyone here knows who Sir Paul McCartney is? He is one of the Beatles, the most famous, successful rock star in the world...Would I be referring to James Paul McCartney III of Liverpool,



External assistance and male responsibility with respect to reproductive health is critical. Above, father and child in Egypt.

SOURCE: *State of the World's Children, 1999*

England, as Sir, if his father had bought him a brand new left handed guitar and nagged him to practice up for his lesson every Tuesday at 4. Who knows?

A look back at the previous millennium and the men and women who helped shape it, does seem to lend some credence to Mr. Toynbee's theory. After all, the man who invented the first practical light bulb and holds the record for the most patents was expelled from elementary school and nicknamed a loony by his co-workers.

The theory of relatively came from a patent clerk...

Slavery in this country was abolished by a boy from Kentucky who grew up in a log cabin, who ruined his eyesight by reading the few books he was able to get his hands on by candlelight.

My point is this. We have been blessed with opportunity. Let's not let discipline, drive and dedication become casualties of that opportunity. Let's not take anything for granted. Let's read the paper, watch the news, read old books, find our mentors and listen to what they have to say. Imagine the heights that we can reach if we stand upon the shoulders of the geniuses who have come before us.

Let us also think critically. As I mentioned the media has treated us to much reflection on the millennium. There is one common thread that seems to weave its way through the architecture of the past millennium...At some point in their lives...they disagreed with what everyone accepted as the norm and they set out to change it. They invented, they formed theories, wrote books, made speeches, signed treaties, took journeys, wrote plays and sometimes, all they had to do was refuse to sit in the back of the bus.

We need to not only be tolerant, of our differences of race, ethnicity, gender, sexuality and religion, but we need to celebrate the differences while at the same time remaining intolerant of hatred and oppression. We need to respect our elders, listen to them, appreciate their experience and learn from them everything we can. And challenge what strikes us as wrong, and we need to take responsibility for our own lives.

We are, each of us, individuals capable of immeasurable good and tremendous folly. Let's act out of knowledge and out of love, mindful that the path we choose will affect those around us. Tolerance, ambition and responsibility. If we learn to balance those three, we'll have given our children a reason to look up to us.

One Teen's Opinion

By Todd Strauss-Schulson (who is actually 20)
Ulterior Productions; and WIT Youth Project

The Backlash Theory

Here's the way it works when you're young and living in the information age. As soon as something gets too cool or mainstreamed there is a mass backlash against it. What *MAD Magazine* did to pop culture in the 60's 70's and 80's, everyone else is doing now. This knee jerk reaction to popularity (which is not new, but only recently can move so swiftly across the nation in the information age) is now a subconscious doctrine people under 24 seem to follow. Nowadays teens define themselves not by what they like, but by what they do not like. In other words, it's less important which Rap artist you listen to than it is that you hate the Backstreet Boys.

Relating This to the Environment

I remember the Exxon Valdez and I remember being taught in school that recycling was good and littering was bad. I remember the day that McDonalds switched from using Styrofoam cups to cardboard ones. There was a time, just at the beginning of the environmentally conscious, media covered, Green Peace bumper sticker 90's when the youth of the world was being told what to do with regard to the environment. "Don't use hairspray!" "Don't buy glow sticks!" "Don't burn leaf piles!" And as any educator or parent knows, when you tell teenagers what to do, they will make sure to do the polar opposite.

So, for the longest time, from, I would imagine, '92 till around '97, kids were rebelling against the cool thing to do, the mass accepted, teacher taught, parents mandated, environmentally conscious mindset.

So Now What?

We are not being told what to do anymore.

We know now! It's not all over the TV, covers of *TIME* or *The Economist*. Adults raised our consciousness, we got sick of all the jack hammering. Stopped paying attention. And now that the jack hammering has subsided, our culture is different and kids know what to do. Being environmentally friendly is ingrained in youth culture. Throw paper in the blue box, not the green one. Ok, we get it.

But there is more. All of that media coverage, those campaigns, presidential speeches, and government-approved laws, have changed the entire face of the teen consumer market. When I was 14, I would go through a big industrial can of Aerosol Hairspray a week. For one, because I wanted Parker Lewis' hairstyle (a cool TV character), and two, because I could buy it at the local Woolworth's. Now, 7 years later, I'm hard pressed to find that same brand name of hairspray, or any brand of hairspray in that size can anywhere. My sister, who is now 14, uses hair gel or mousse, and when she gets the craving to use hairspray, she uses a non-aerosol kind. Point is; kids now aren't using excessive amounts of aerosols because they can't. And while I realize that was a shoddy example, it is true all across the board, most everything that kids who grew up in the 50's and 60's were taught, that in retrospect ended up being bad for the environment, kids today know nothing about. Burning leaf piles on Thanksgiving is not part of a normal suburban teens' vocabulary anymore.



Politics for Generation X

SOURCE: *The Atlantic Monthly*, March 2000

Moving Science to the Forefront

Dr. David L. Lewis, Department of Marine Sciences, University of Georgia, U.S.A.

The role of science in environmental protection was briefly addressed in the twenty-seven Principles set forth by the United Nations Conference on Environment and Development in Rio de Janeiro in 1992. While acknowledging the importance of science, a Precautionary Principle was added to emphasize that it may not be prudent to resolve all uncertainties before taking action.

The United States has largely assumed that this approach minimizes risks to public health and the environment and has pursued it as a matter of national policy. Examples of regulating without the support of a majority of scientists include actions taken to further reduce atmospheric ozone and particulate matter and to eliminate certain chlorination by-products from drinking water.

Emerging evidence suggests that environmental policies lacking adequate scientific underpinning can create new problems with their own inherent uncertainties. As a case in point, concerns have recently surfaced over the potential effects of groundwater contamination with methyl tertiary butyl ether (MTBE). This suspected carcinogen with unknown effects on humans and animals was approved in the early 1990's as a gasoline additive for cleaner burning fuels.

Similarly, chlorofluorocarbons (CFCs) were replaced with oxidized halomethanes having unknown effects on humans, animals, and vegetation. These chemicals react with traces of water in refrigeration systems, forming strong acids. Corroding refrigeration units may eventually begin leaking the gases into the atmosphere, giving rise to uncertain environmental consequences.

Precautionary Principle

"In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

—Principle 15 of the Rio Declaration On Environment and Development, The United Nations Conference on Environment and Development, June 1992, Rio De Janeiro

Another major change occurring over the past decade has been the transition from ocean dumping of municipal wastes to land application of sewage sludge, primarily for agricultural purposes. Risks that low levels of pathogens may pose to the general population, especially to immunocompromised individuals, were not adequately assessed. Sporadic illnesses and two deaths in the U.S. associated with land applied sludge suggest that the material may carry unanticipated risks. My own research into several of the cases indicates that irritant gases emitted by sludge, including trimethyl amine and ammonia, may predispose people and animals to infections.¹

Under-emphasizing science can also lead to missed opportunities for developing new ways of reducing the effects of environmental pollution.² The pharmaceutical industry, for example, has taken advantage of new developments in chiral chemistry in order to manufacture drugs with fewer side effects. This approach could be used to manufacture a wide array of products, from pesticides to plastics, so that contaminants entering the air, land, and water are less damaging to human health and the environment.

Clearly, it is not necessary to resolve all uncertainties before instituting measures aimed at curbing pollution and other forms of environmental degradation. Nevertheless, if we fail to move science closer to the forefront in environmental protection we will ultimately exacerbate current environmental problems, create serious new problems, and miss important opportunities to reduce the overall effects of mankind's impact on the environment.³

References: 1. Lewis, D.L. *Sludge gases and low levels of pathogens. Biosolids Management in the 21st Century. National Science Foundation Workshop. April 10-11, 2000. College Park, Maryland*; 2. Lewis, DL, et al. 1999. *Influence of environmental changes on degradation of chiral pollutants in soils. Nature. 401:898-901*; 3. Lewis, D.L. 1996. *EPA Science: Casualty of election politics. Nature. 381:731-732.*

Urban Air Pollution Risks to Children: A Global Environmental Health Indicator

Dr. Devra Davis, Visiting Professor at the Heinz School of Carnegie Mellon University, Pittsburgh, Pennsylvania

This report completes work first presented to the Annual Meeting of the American Association for the Advancement of Science, in Anaheim, California, in January, 1999, on risks to children from urban outdoor air pollution. The

first investigation included 207 cities with a population over 1 million in 53 countries weighted for three air pollutants—Total Suspended Particulates (TSP), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂). The more current examination featured in this report focuses on cities with a population over 9 million. In order to assist policy makers in identifying priority areas for intervention, we present two distinct analyses: 1.) Cities with populations over 9 million—megacities—are ranked in terms of the annual average levels of three different pollutants; 2.) Megacities are identified where the greatest number of children face the highest risks from these 3 pollutants combined. The same activities that contribute to local and regional air pollution also threaten our climate and weather, according to several important studies. Thus, climate policy provides another means for reducing health risks from pollution. Efforts to promote energy efficiency and reduce air pollution today will protect the health of millions of children today, and will also reduce the buildup of greenhouse gases in the long term. Additionally, this report examines the necessity of comprehensive and accurate air quality monitoring and information management for developing successful interventions.

WHO's Tobacco Free Initiative and the 2003 Framework Convention

Clarence Pearson, Senior Technical Officer for WHO's Tobacco Free Initiative; President and CEO of the National Center for Health Education

Tobacco Free Initiative (TFI) is a World Health Organization's (WHO) cabinet project created to focus international attention, resources and action on the global tobacco pandemic that kills four million people a year today. By 2030, tobacco will kill 109 million people a year, more than the combined death toll from malaria and major childhood killers. Over 70 percent of these deaths will occur in the developing world.

Globalization of marketing and trade in tobacco products means that all countries need to take strong action individually and together if their populations are to become tobacco free. WHO is leading the way with the Framework Convention on Tobacco Control (FCTC), the world's first multilateral negotiating rules focusing on global tobacco control. It will be ready for signature by all of the participating countries not later than 2005. This new legal instrument is expected to address issues as diverse as tobacco advertising and promotion, agricultural diversification, regulation, smuggling, excise tax levels, treatment of tobacco dependence and smoke-free areas.

Recent studies have clearly demonstrated that the tobacco epidemic involves a significant socioeconomic gradient, and increasingly, tobacco clusters in lower socioeconomic groups. The World Bank report, "Curbing the Epidemic; Governments and the Economics of Tobacco

Control", provides a comprehensive economic analysis which supports multi-sectoral, cost-saving interventions aimed at stemming the tobacco epidemic.

Some of the major issues are taxing of cigarettes, smuggling and advertising bans.

While there is vigorous debate about the impact of cigarette advertising on consumers, public health advocates argue that such advertising does increase consumption. The tobacco industry has argued that its advertising does not recruit new smokers but merely encourages confirmed smokers to stay with, or switch, to a particular brand.

Several studies have analyzed the impact of negative messages about smoking and cigarette consumption, and these messages have been consistently found to reduce overall consumption.

This is the first time in the 51-year history of WHO that the member states are negotiating a legally binding Convention by activating Article 19 of WHO's Constitution. In May of 1999, the 191-member World Health Assembly unanimously backed a resolution calling for work to begin on the Framework Convention.

Stop Our Children From Smoking: The Personal Touch

Marie De Paris, Senior Vice President, New York Daily News

Today, about 1.1 billion people smoke worldwide and smoking accounts for 10 million deaths per year. By 2025, the number of smokers is expected to rise to more than 1.6 billion.

Most smokers start young. In high-income countries, eight out of ten begin in their teens. Worldwide, everyday, there are between 68,000 and 84,000 young people starting to smoke and risking addiction to nicotine.

There are severe health consequences to smoking. Rapid addiction to nicotine is well documented and often underestimated by the smoker. Studies among high school students in the United States suggest that fewer than two out of five smokers who believe that they will quit within five years actually do quit. Seven out of 10 adult smokers in high-income countries say that they regret having started to smoke and would like to stop. Quitting is difficult and rare. 98% of those who try to stop smoking without the assistance of cessation programs have started again within one year.

The risk of premature death among smokers is extremely high and half of all long-term smokers will eventually be killed by tobacco. Smoking causes fatal and disabling disease, including lung and organ cancers and circulatory



Waiting to inhale: A Manhattanite puffs outside Philip Morris headquarters.

SOURCE: *World Press Review, October 2000*

and respiratory diseases.

The tobacco companies have targeted women and young people as potential growth markets. We can assume that they underestimate the health risks and consequences of smoking, as well as the high risk of becoming addicted to nicotine.

In the United States, tobacco companies have been required to support a cooperative youth smoking prevention campaign. Billboards and print ads around the country display creative messages that smoking is not cool, that it kills and that teens should not begin

smoking. How influential are these advertising messages?

National and local studies in a number of nations have analyzed the impact of negative messages about smoking on cigarette consumption. Counter-advertising messages have been consistently found to reduce overall consumption, in general.

Role of Environmental Protection to Control Lung Diseases in Developing Countries in the New Millennium

*William N. Rom, MD, MPH, Professor of Medicine and
Environmental Medicine, New York University School of Medicine*

By 2000, tobacco is expected to cause more premature death and disability than any single disease. Approximately 45% of males and 15% of females are smokers. 85% of the attributable risk for lung cancer is due to smoking. DNA-adducts from tobacco carcinogens occur on methylated CpG sequences of the p53 and k-ras genes leading to mutations at hot spots or frequently mutated sites in these genes in lung cancer. Nicotine in cigarette smoke induces neutrophil elastase plus the cigarette smoke associated macrophage expression of matrix metalloproteinases leads to parenchymal lung destruction (COPD).

Air pollution in urban smog exacerbates asthma and COPD. Ozone is increased from automobiles, and particulate matter from combustion especially power plants. The burden of COPD will increase from 12th among all diseases in 1990 to 5th in 2020. Indoor air pollution is a leading problem in rural dwellings where cooking inside huts with biomass fuels leads to anthraco-silicosis or hut lung.

Major depression will be the second leading cause of disease/disability in 2020. Preservation of green space should be a major goal for people to unwind in nature from urban stresses. Wilderness will all but disappear by 2020 unless preserves are set aside now. Protection of the environment is linked to controlling numerous exposures and diseases such as air pollution and COPD.

CHERNOBYL UPDATE**Before the Closing of the Chernobyl Plant:
A Brief Review** *by Dora Rak*

The fate of the famous Chernobyl plant, the river Prypiat in Ukraine, was finally decided. President Leonid Kuchma set up December 15, 2000, for the complete shut-down of the tragic nuclear station which exploded on April 26, 1986. The decision kept his promise at the meeting with the G7 countries and the provisions of the 1995 memorandum. This historic decision was made public during the visit of President Clinton to Kiev on April 15, 2000, who commented on the difficult choice for the country and offered a special contribution of \$78 million for the rebuilding of the leaky sarcophagus on the fourth reactor. Incidentally, the cost of the new shell is estimated at about \$768 million, the largest part of which would come from the G7 biggest industrial countries. However, the overall cost to cover the ruined reactor and to replace the lost energy source by the new reactors—being built at Khmelbitsky and Rivne—will reach more than two billion dollars.

Additional contributions were declared at the donors conference convened by German Chancellor Gerhard Schroeder in Berlin, July 5th, where 40 countries participated. Do nations were pledged by the European Commission, United States, Japan, Germany, United Kingdom, Canada and others. According to the available information, there are a number of major problems related to the closing of the Chernobyl plant—technical, economic, social environmental, as well as human. The reactor has to be decommissioned and a storage place setup for the spent fuel and other radioactive waste inside the reactor. The closing plan will specify all actions to be taken in the dismantling of the reactor systems and deactivating those that are still radioactive. Also some new facilities need to be constructed for reprocessing and storage of liquid nuclear waste and spent fuel rods. The closing will create social problems of unemployment for about 4,000 workers—currently 5,900 are employed at the plant. Some workers will be required to keep the plant in operation for clearing purpose and servicing, which is estimated to take five years and cost about \$6 million annually. The support and cooperation of the UN Agencies (WHO, UNICEF, etc.) will be needed for many more years to insure the safety from any unexpected technical problems and to help the victims of the nuclear disaster by minimizing and mitigating other

The following is a remarkable piece of writing by the native American, Chief Seattle. In 1854, President Franklin Pierce offered to buy a large area of Indian land, and ordered the Chief's people to move to a reservation. This is an excerpt from his reply to the President.

"Every part of the earth is sacred...Every shining pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy...We are part of the earth, and it is part of us...The earth does not belong to man; man belongs to the earth. Man does not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself..."

long-term consequences. Ukraine has already become a member of the Board of Governors of the International Atomic Energy Agency (IAEA) in Vienna for its 44th session for 2000–2002 and therefore can rely on its advice and support. Finally, as the commitment to close the Chernobyl

Plant was made under pressure from other countries, their help may resolve future difficulties. Fourteen years divide us from this horrible accident when 50 tons of radioactive dust and debris were carried by wind and rain to many countries. How many of the 600–700 hundred thousand so called "liquidators" recruited from all over the former Soviet Union to build the sarcophagus, who are now

dispersed in the new republics, survived the radiation or suffer from the long-term consequences of exposure to cesium or strontium? Some 167,000 people who lived in the 18 mile radius of the plant—the "dead zone"—had to be evacuated, leaving the area depopulated. The accident left physical and psychological scars upon a great segment of the population with increased disabilities in new born children and an epidemic of thyroid cancers among children who lived down-wind of the radioactive fallout. The health effects from other long-life radioactive elements like cesium and strontium have been difficult to measure as the accurate statistical data are not yet available. The long term consequences of the nuclear accident continue to affect some 3.5 million people which in turn explains (to a certain degree) the troubling current demographic situation in Ukraine, an increase in mortality cases and decrease in the number of new born children. Hence the population of Ukraine decreased from 52,600,000 in 1991 to 49,470,000 currently. When the fifteenth anniversary of the worst nuclear accident will come on April 26, 2001, the world will be a little safer, but the consequences of this will linger for many years and decades. The ecological disaster contaminated air, soil and water in many areas that remain unfit for human use, while the rehabilitation process will be slow and long. Therefore, the UN General Assembly resolution calling for the "international cooperation and coordination of effort to mitigate and minimize the consequences of the Chernobyl disaster should remain in force in order to secure the support of the international community even after the closing of the Chernobyl Plant on December 15, 2000."

HEALTH AND ENVIRONMENT

Criteria for Persistent or Bioaccumulative Toxic Chemicals for Environmental Policy-Making

Presented by Ted Schettler

Toxic chemicals that are environmentally persistent or bioaccumulative can pose serious threats to human health and ecosystems, even when used or released in very small quantities. Persistent, bioaccumulative toxic chemicals such as dioxin (2,3,7,8-TCDD), mercury, and lead have long half-lives in the environment and in organisms, sometimes measured in years, with impacts that range from cancer to altered development in wildlife and humans. Children often are disproportionately exposed to these chemicals compared to adults due to the greater surface area to weight ratio of children, their higher food consumption and air inhalation per pound of body weight, and their distinct patterns of behavior (e.g., hand-to-mouth activity).

The U.S. Environmental Protection Agency (EPA) has developed new reporting thresholds under the right-to-know law (1) for certain toxic chemicals that meet EPA's criteria for both persistence AND bioaccumulation.(2) We believe, however, that toxic chemicals that are either persistent OR bioaccumulative should trigger a lower reporting threshold. Moreover, the persistence and bioaccumulation criteria should apply to other environmental policies as well, including those currently being negotiated for elimination of persistent organic pollutants under the auspices of the United Nations Environment Program.

Rationale for separating the persistence and bioaccumulation criteria

A strong argument can be made for considering persistence and bioaccumulative potential independently, as each influences exposure in different ways.(3) Persistence may be defined as the length of time chemicals remain in the environment before transformation into other chemicals through natural processes. Bioaccumulation is the ability of chemicals to be taken up, retained, and concentrated by organisms.

The likelihood that organisms will be exposed to persistent chemicals is greater than for chemicals that rapidly transform. As the frequency of chemical contact increases, so does the likelihood that exposures will occur at vulnerable times in organisms' life-cycles. Organisms also are more likely to be exposed to higher concentrations of persistent chemicals than to non-persistent substances having similar release patterns.

In addition to frequency and concentration, the bioaccumulative potential of chemicals influences the duration of exposure. Prolonged exposures often elicit toxic responses that do not occur after exposures of shorter duration.

Frequency, timing, concentration, and duration are each

important exposure parameters. Thus, we propose use of the term persistent OR bioaccumulative toxicants, (PoBTs, rather than the more commonly used term PBTs) to emphasize the importance of each of these chemical characteristics.

Table 1 contains examples of chemicals that would not meet most generally-accepted criteria for both persistence and bioaccumulation, including EPA's criteria. EPA's "Waste Minimization Prioritization Tool" lists several hundred known/potential toxicants that are highly persistent and non-bioaccumulative, but only a few that are highly bioaccumulative and non-persistent.

Evaluating the persistence of a chemical

Persistence can increase or decrease as chemicals move from one environmental medium to another, at rates that depend on medium-specific conditions, such as temperature, pH, and solar radiation. Measured half-lives may vary by several orders of magnitude depending on the medium and measurement conditions (for example, aerobic/anaerobic conditions, concentration, temperature). To determine maximum persistence for policy-making, estimates of persistence under realistic conditions must be considered for all pertinent media.

Table 1
Examples of High Persistence, Low Bioaccumulation and High Bioaccumulation, Low Persistence Toxic Chemicals^a

Chemical	Persistence	Bioaccumulative	Adverse Impacts on the Environment and Human Health	Listed Right-to-Know Chemical?
Ethylene Oxide	High	Low	Carcinogen and reproductive toxicant	Yes
Methylene Chloride	High	Low	Carcinogen	Yes
Arsenic, Nickel (both elemental)	High	Low	Carcinogens, developmental toxicant (arsenic)	Yes
Endosulfan	Low	High	Ecotoxicant (birds, shellfish)	No
4, 4'-Methylenediphenyl Isocyanate	Low	High	Suspected immunotoxicant and respiratory toxicant	No

^aData from EPA's "Waste Minimization Prioritization Tool" (4)

Table 2 lists the conditions and transformation processes that may influence the environmental half-lives of chemicals. Biodegradation generally is the most important factor determining persistence in water, soil, and aquatic sediment, and is strongly influenced by chemical concentration and bioavailability. Bioavailability is based on whether chemicals

are sorbed so strongly to soil or sediment particles that microorganisms cannot degrade them or sorption reduces aqueous concentrations below those required by microorganisms.(5)

Webster, Mackay, and Wania have shown that if chemical partitioning (movement of a chemical between different environmental media) and medium of entry into the environment are accounted for using a mass balance model, then relative persistence may differ substantially from persistence evaluated using only half-life data for a single medium.(6) These authors acknowledge that under certain circumstances, however, single media half-lives are reasonable screening tools.

The need for a simple system to define and evaluate persistence leads us to the following proposal:

Table 2
Environmental Conditions and Processes that Impact a Chemical's Persistence

Environmental Medium	Important Conditions	Chemical Transformation Processes
Air	Temperature, solar radiation (daily and seasonal variations)	Oxidation by photochemically-generated OH and NO ₃ radicals; to a lesser extent, oxidation by O ₃ radicals and direct photolysis
Water: Surface and Groundwater	Aerobic and anaerobic; chemical concentration; temperature and pH variations; and sediment presence	Biodegradation, hydrolysis, photolysis (surface water only), other abiotic reactions
Soil	Aerobic and anaerobic; chemical concentration; realistic soil-to-water ratios and organic carbon contents; temperature and pH variations	Biodegradation, hydrolysis, photolysis (surface soils only), other abiotic reactions
Aquatic Sediment	Aerobic and anaerobic; chemical concentration; realistic sediment-to-water ratios and organic carbon contents; temperature and pH variations	Biodegradation, hydrolysis, other abiotic reactions

Chemicals should be considered persistent when their half-lives exceed two months in any non-atmospheric environmental medium at 20-30o C., under aerobic conditions. If chemicals are used in cold climates, they should be tested for persistence at less than 20o C. Chemicals present in groundwater, soil, or aquatic sediments should be considered persistent if they have half-lives in these media greater than two months.

Because atmospheric transport times on the order of days may introduce chemicals into sensitive ecosystems, chemicals with atmospheric half-lives exceeding two days also should be considered persistent.

Two months is sufficiently long for bioconcentration and chemical transformation, yet short enough that field data should not be dominated by seasonal changes. Additionally, several international and national bodies, including EPA, have set persistence criteria for water, soil, and aquatic sediment at two months.(7)

Evaluating the bioaccumulative potential of a chemical

A chemical's potential to bioaccumulate may be characterized by its bioconcentration factor (BCF) or bioaccumulation factor (BAF). BCF is the ratio of chemical concentration in a test organism to that in water, and reflects only uptake from ambient water. Because the tendency of a substance to accumulate and concentrate in animal tissue often depends on the substance's hydrophobicity or lipophilicity, the logarithm of the octanol-water partition coefficient (Kow) is often used to estimate BCF. For policy purposes, log Kow could serve as a practical surrogate for BCF.

BAF is the ratio of chemical concentration in a test organism to that in water, but it depends on uptake from all media to which organisms are exposed, including water, sediment, and food. BAF thus reflects total exposure in aquatic systems. Unlike BCF, BAF must be measured. In order of preference, one should select a measured BAF, a measured BCF, then an estimated BCF in order to understand how a substance actually behaves in the environment.

It is important to choose a low BCF to identify bioaccumulative chemicals for policy purposes, since BCF values neglect the food and sediment exposure pathways. In our view:

Chemicals should be considered bioaccumulative when estimated BCF > 500, or when BAF > 1000. If measured BCFs exist which have undergone peer review, and as an incentive to develop those values, chemicals should be considered bioaccumulative when measured BCF > 1000.

In the absence of data, log Kow may be used to estimate BCF. To ensure that most bioaccumulative chemicals are identified, we recommend using log Kow > 3 to identify chemicals with bioaccumulative potential. Note, however, that log Kow will overestimate bioaccumulative potential for some chemicals with log Kow > 6.

Addressing transformation products and parent compounds

Some chemicals that are not persistent or bioaccumulative can be biologically, physically, or chemically transformed into persistent or bioaccumulative substances. It is important, therefore, to consider transformation products, especially microbial degradation products and metabolites, in PoBT policies. As an example, nonylphenol polyethoxylates (high-use detergent components that are non-bioaccumulative) readily degrade to relatively stable compounds, including nonylphenols. Nonylphenols are significantly more persistent

and have a higher bioaccumulation potential than their nonylphenol polyethoxylate precursors.⁽⁸⁾

Conclusion

Fewer than 1% of the approximately 90,000 manufactured or processed chemicals meet the persistence or bioaccumulation criteria described above. Yet, because of the need for relative certainty when considering "virtual elimination" of chemicals from commerce, accurate and complete data on persistence, bioaccumulation, and partitioning and medium of entry into the environment (as per Webster, et al.) (6) should be generated.

Persistence and bioaccumulative potential are not always correlated, yet both chemical characteristics can increase adverse ecological and human health impacts through independent exposure mechanisms. Policies designed to prevent such impacts should account for each of these chemical characteristics. Parent and principal transformation products also should be addressed.

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"If I love school but my parents won't let me go, will you help me?" Girls are often kept out of school because parents cannot imagine how different her life—and the family's—would be with education.

SOURCE: "If I Tell You Will You Listen", Plan International

FOOD FOR THOUGHT

Health Issues and the Media: The Complexity of Reporting

Dr. Mark G. Robson, Environmental and Occupational Health Sciences Institute, UMDNJ-School of Public Health, New Jersey, USA

Health issues, particularly as they relate to the environment are complex and, at times, difficult to understand. Reporting the issues, and the risks associated with them are particularly difficult for scientists, the media, and the public at large.

The first challenge is to define the risk. The risk to whom and at what level is especially problematic. Risk is based on probability. In the United States, for instance, we have to define what the cancer risk is in the general population. We know this risk to be approximately one in four. This is a general risk, or likelihood, that one will develop some type of cancer over his or her lifetime. This is without regard to occupation, life style, socioeconomic status, etc. The second part of explaining the risk of a particular cancer or other adverse health effect is When? What is the latency, the period from the time of the exposure till the time of the ill effect? In some cancers the latency period can be twenty years, thirty years, or more. This is particularly true for occupational cancers or other occupational diseases. Workers may remain in the workforce their entire adult life, the cancer or other adverse outcome may not manifest itself until the worker has left the job, and has retired or taken up a new occupation. Again, this notion of latency, especially for diseases that have a long latency of time is very complex and difficult to explain.

In the United States and many other Western countries, the applied standard for risk is 10^{-6} , or one in one million risk. Many people ask one in one million what? Simply put, it is the likelihood of an adverse effect occurring once in a population of one million. If we are looking at cancer as the outcome for one in one million, we might say that in a population of ten million people, we would expect ten cancers. Of course this is complicated by the fact that we have a background rate of one in four. The notion of one in one million often gets lost, given the high background rates.

Risk issues are even further complicated when the risk involves multiple exposures in sensitive populations. Let's look at the example of pesticides in children. The toxicological research for pesticides, and for that matter most toxicants, drugs, and consumer products is accomplished using data on adults. When this research is applied to children they are viewed as "little adults," which they are not. Infants and children are growing and developing. They



"If I ask you not to drink and hit, will you respect my wishes?" Development programs need to address social concerns raised by children themselves, such as alcoholism and family violence, if they are to mature emotionally.

SOURCE: "If I Tell You Will You Listen", Plan International

have much more rapid metabolic rates. They also have differences in activation, detoxification, and excretion. Additionally, children consume more calories of food per unit of body weight than do adults. They consume fewer types of food, hence, they consume more of certain types of foods, especially processed foods. Toxicity testing is conducted on laboratory animals. Up until the present time the testing focused on mature animals. Only a minority of testing protocols has supported extrapolation to infant and adolescent animals.

When we talk about risk and potential health dangers, we usually represent the levels in very unfamiliar terms: ppb or ppt, parts per billion or parts per trillion, levels that only recently have been measurable. In previous times we were able to say the chemical of concern was undetectable, the newer instrumentation and the ever expanding analytical capabilities have created a phenomenon called the "vanishing zero." You really cannot have a level of non-detection. The question then becomes: How great a risk is something at one ppt? What does that mean in real terms? Is this a background level, or a level of concern?

We base risk on what the average person does, what he or she eats, what they do for a living, and where they live. The question becomes: What is average? Or what is normal? We simply don't know. There is a wide range of difference based on geography, ethnicity, gender, and age. For food risks we attempt to do "market basket" surveys, and, based on the concern above have started doing "children's market basket surveys."

After making all the measurements, we still aren't sure.

We then apply a series of uncertainty factors to the numbers we develop, just to be on the safe side. Scientists and regulatory agencies look for a NOEL, a no-observable-effect-level. Then, after deriving this level experimentally, a factor of ten is applied for the extrapolation of animal data to humans, a second factor of ten is applied to account for the variation within the human population, and then a third factor of ten is applied to be protective of children.

Why is this so important? Surveys show that most people get their information from the media. Risks are of great interest to readers or viewers. Also, most surveys show that good health is the most important thing in life for most people.

As the world grows smaller and closer through communication technology and transportation, greater opportunities present themselves to transmit accurate information on health risks. Scientists need to work with the media to be pro-active, especially in such areas as teenage smoking. Here, the risks have been well documented, yet the numbers of young people who smoke throughout the world continue to increase. How can we get this message across?

For any health risk this is the broad question we must address. One answer is that we must work with the media to adequately describe the risks if we want to secure a well informed and well-protected global society.

GOOD NEWS!



Communication linked to services is an essential part of reproductive health programmes. Mexican health assistant gives talk to village women about family planning and reproductive health.

SOURCE: The State of World Population, 1999



GOOD NEWS!

■ Thailand has the lowest percentage of illiterate males above 15 years of all countries in this Southeast Asian region, and ranks second to the Philippines for female illiteracy. Thailand also ranks first in the region when it comes to the knowledge and use of contraceptives. Much credit for this goes to the successful campaigns the country has undertaken over the years, especially in

the use of condoms to reduce the risk of HIV/AIDS. But despite this knowledge, Thailand is the second highest-ranked Southeast Asian country for the number of births to girls aged 15 to 19 years. Only 71% of children are born with a skilled attendant present. A survey of the world's adolescents showed that Thai males considered it a right to have multiple sexual partners. Yet, they had a double standard of near-total admiration for the quiet, innocent "good" girl. The Bangkok Fights Aids Project was quoted as discovering in its survey that Thai girls thought romance was their top priority in a relationship while Thai boys said sexual intercourse was the priority and that they admitted often forcing girls to have unprotected sex. Figures from the United States show that the top source of foreign women being discovered in forced prostitution in that country was Thailand. According to UNICEF, Thailand has the highest importation of women for forced commercial sex from neighboring countries than any other place in the world.

SOURCES: *State of the World Population 2000*, published by The United Nations Population Fund; *Bangkok Post*, September 25, 2000.

■ With the ratification of Italy on September 22, 2000, the Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women has been ratified by 10 countries. It will enter into force on December 22, 2000. States which ratify the Optional Protocol recognize the competence of the Committee on the Elimination of Discrimination against Women to consider petitions from individual women or groups of women who have exhausted all national remedies. The Optional Protocol also entitles the Committee to conduct inquiries into grave or systematic violations of the Convention. The Committee is the body established under the Convention to monitor its implementation. The ratification of the Optional Protocol, and its entering into force on December 22, represent further milestones on the road towards the achievement for all women of their fundamental human rights and freedoms. It is also a recognition of the universality of human rights.

SOURCE: *UN Press Release*, New York, September 25, 2000, L/T/4347, WOM/1236

■ Although the outbreak of Ebola in Northern Uganda has brought the nation into the news headlines, the country is the first African nation to show decreased incidences of

Cambodia's Rediscovered Wildlife

Research in Cambodia's Cardamom Mountain region has uncovered an unexpected range of wildlife—including new and endangered species, as well as animals and plants previously unseen in the region. Ironically, many of the species appear to have flourished in the forested area, since this became virtually a "no man's land" for people during Cambodia's civil war. Since peace has come to the country, it appears that many of these 'protected' species may now become threatened. A team of European and Cambodian scientists and environmentalists, led by the UK's Fauna & Flora International (FFI) the world's oldest conservation charity, carried out the first wildlife surveys of the Cardamom Mountains and Mount Samkos Wildlife Sanctuary in early 2000. Among the research highlights:

- The discovery of a large population of the critically endangered Siamese crocodile, thought to be virtually extinct in the wild.
- A disproportionately high percentage of the country's bio-diversity contained in the Cardamom Mountains: The mountain range covers only 6% of Cambodia's land area but supports at least 50% of its birds, reptiles and amphibians and most of the country's large mammals.
- The discovery of species new to science, including a species of wolf snake and more reports of the elusive 'Khting vor' a new species of large mammal related to goats or cattle.
- Evidence for species not previously known to inhabit Cambodia, including the fishing cat, Sikkim mouse, the impressed tortoise, woolly horseshoe bat, and 19 species of birds.
- The core of the Cardamom Mountains, forming part of the watershed that feeds the Mekong River, consists of over 1 million hectares of undisturbed tropical forest marshes and wide rivers.

FFI is calling for a number of measures to be instigated in order to preserve Cambodia's wildlife. These measures include investment in personnel to protect the wild areas, review of the country's land and wildlife protection laws, better management of existing conservation areas, and investment of international aid money in social and economic projects which incorporate environmental protection.

SOURCE: *Fauna & Flora International*, (ken.richard@fauna-flora.org)

HIV/AIDS. A major reason for this decline was communication. Newspapers have regular columns with sex discussions for young people, for professional soldiers, as well as letters' columns relating to HIV/AIDS. Radio stations carry the safe-sex message to rural villagers who may not be able to read. There are also drama activities which go around the rural countryside, and these are very important in raising awareness. Widespread communication about HIV/AIDS has led to a delay in the onset of sexual activity in both boys and girls, but particularly in boys. Girls have reported fewer unintended pregnancies, and condom use has increased.

SOURCE: *Reuters and The Communication Initiative Partnership [The Rockefeller Foundation, UNICEF, USAID, The CHANGE Project, WHO, BBC World Service, CIDA, Johns Hopkins University Center for Communication Programs, The European Union, Soul City, The Panos Institute, UNAIDS].*



DID YOU KNOW?

■ Each year, Europe's giant nuclear reprocessing facilities at Sellafield in the UK and La Hague in France, discharge hundreds of millions of litres of radioactive waste into the sea. Carried by the ocean currents, radioactivity from La Hague and Sellafield has already been detected in sea life around the coasts of Scandinavia, Iceland and the Arctic, and will continue to build up in the food chain, threatening the health of millions of people, until the discharges end.

The plants in La Hague and Sellafield are responsible for approximately 90% of all radioactive waste discharged into the European environment. In 1993, the Contracting Parties to the London Convention, the UN treaty which regulates the dumping of wastes at sea, banned the dumping of all radioactive wastes from ships, aircraft, platforms and other man-made structures at sea. However, the agreement does not cover the dumping of radioactive wastes in the sea from a land-based pipeline.

SOURCE: Greenpeace Intl., © Copyrighted 1997-2000 All Rights Reserved. Common Dreams.

■ Recently India's population reached a billion. But this is no cause for celebration. India's population has tripled in the last 50 years. Every year India adds more than 15 million people. By the year 2045, India's population is expected to overtake China's population. China has more than three times the area of India. At the beginning of the century, India's population, which then included what is now Pakistan and Bangladesh, was about 200 million. In 1947 Delhi's population was about 700,000; now it is more than 13 million. In Pakistan and Bangladesh the population has grown at the same rate.

SOURCE: Chicago Tribune; June 15, 2000

■ The grace period given to developing countries for the implementation of the Montreal Protocol on protecting the ozone layer is now over and the compliance regime has begun. Under the landmark international agreement, the Montreal Protocol on Substances that Deplete the Ozone Layer, 175 countries have committed to a precise schedule for reducing and eventually phasing out their consumption and production of ozone-depleting substances or ODS. July 2000 marks the end of the first year of the compliance regime for developing countries that have ratified the Montreal Protocol.

UNEP's Division of Technology, Industry and Economics (UNEP DTIE) OzonAction Programme in Paris has put together the analysis to help explain where developing countries stand in relation to their commitments under the

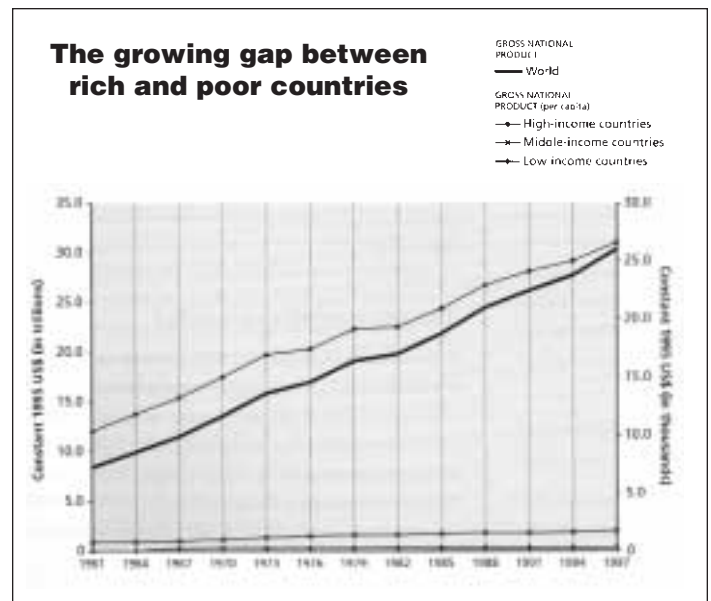
Montreal Protocol. By providing a graphical trend in a country's past consumption and production levels of ozone-depleting substances (ODS), the Trends Analysis web site gives an indication of the consumption trends and the likely shape of future reductions. Available data currently permit UNEP to assess the status of 105 countries. The data are available on the OzonAction Programme's web site at www.uneptie.org/ozat/nou/datareport

At least two-thirds of the countries covered by the analysis are in a good position to meet their compliance obligations. Nevertheless, some countries will need further focussed assistance to meet their commitments and maintain momentum. The Trends Analysis is part of the information exchange services provided by UNEP to developing countries to help them meet their obligations under the Montreal Protocol. For more information, please contact: Chief UNEP DTIE Energy and OzonAction Unit, Paris, tel: +33-1-4457-1450, fax: +33-1-4457-1474, e-mail: ozonaction@unep.fr, web site: www.uneptie.org/ozonaction.html

SOURCE: UNEP Information Note 2000/39, 22 August 2000

■ 1.2 billion people out of the global population of approximately 6 billion live in absolute poverty—a per-capita income of less than a dollar a day. The number has increased by 200 million in the last five years. An additional 1.6 billion people live on less than \$ 2 a day. An important dimension of extreme poverty is discrimination against women. Though women do most of the work around the world, they make up approximately 700 million of the 1.2 billion people living in absolute poverty. Two-thirds of the world's illiterates are women. An estimated 200 million girls who should be in schools worldwide are not studying. In Yemen, for instance, only 31 percent of girls are in schools, as compared to 81 percent of boys.

To help offset gender based poverty, India has implemented an affirmative-action program for the election of village chiefs, with a certain number of posts set aside for



women belonging to disadvantaged castes. Amartya Sen, awarded the 1998 Nobel Prize in Economics, suggests that direct feeding programs, such as school lunch programs, are much more effective at improving the health and well-being of girls as compared to general food-disbursement programs, in which food may not actually reach girls in families.

SOURCES: *The Houston Chronicle*; October 16, 2000; U.N. Population Fund

■ Scientists working for Swiss food giant Novartis have developed and patented a method for 'switching off' the immune systems of plants, to the outrage of environmentalists and Third World charities who believe the new technology to be the most dangerous use so far of gene modification. Patents filed by Novartis, manufacturers of Ovaltine, reveal that its scientists expect to be able to use the radical biotechnology for almost every crop on Earth. Novartis claims that the new use of genetic modification will give farmers greater control over disease and boost production. But critics insist that it will make Third World farmers dependent on buying the company's chemicals each year to produce healthy harvests. The process involves transferring a single DNA molecule, described by the firm as the 'NIM gene', to the plant. This gene then reacts with the plant's immune system, allowing it to be switched on selectively by the use of chemicals when disease threatens. But the patent also describes plants where the entire immune system has been switched off, making them highly prone to disease.

Environmentalists fear the new technology could have a disastrous ecological impact if crops with their immune systems suppressed are allowed to cross-pollinate with surrounding plant life. The use of GM technology, which uses chemicals to activate genetic traits, was specifically condemned by the UN earlier this year. It recommended that the technology should not be field-tested and called for a moratorium on its development until the impact had been fully assessed.

For further information contact: President, Institute for Agriculture and Trade Policy, 2105 First Avenue South Minneapolis, Minnesota 55404 USA, www.iatp.org or www.wtowatch.org

SOURCE: *The Observer*, London UK 8 October 2000



SOURCE: *Scientific American*, November 2000



VOICES

■ The International Year of Volunteers (IYV). On November 20, 1997, the 52nd session of the United Nations General Assembly proclaimed 2001 as the International Year of Volunteers. The IYV will be launched December 5, 2000, the International Volunteer Day. The main objectives of the Year are recognition, promotion, facilitation and networking of volunteer contributions worldwide, and the impact of volunteer

activity on the welfare of all nations and cultures. When the UN General Assembly proclaimed by consensus IYV 2001, it also designated United Nations Volunteers (UNV) as international focal point for the Year.

Further information can be found on Profiles section of the IYV web site, at: www.iyv2001.org/iyv_eng/global/region/region1.htm

Other useful web sites are

- IAVE: www.iave.org/iyv.html
- NET AID Online Volunteers: UNV/UNDP/CISCO: www.netaid.org; Team IYV 2001 External Relations Group, United Nations Volunteers, Postfach 260 111 D-53155 Bonn, Germany. Tel. 49-228-815-2000; Fax 49-228-815-2959

■ *World Resources 2000-2001: People and Ecosystems, The Fraying Web of Life*, is an important global research effort that examines coastal, forest, grassland, freshwater and agricultural ecosystems. The report grades their health on the basis of their ability to produce the goods and services that the world currently relies on. These include production of food, provision of pure and sufficient water, storage of atmospheric carbon, maintenance of bio-diversity and provision of recreation and tourism opportunities. The research supported by the United Nations Development Programme (UNDP), UNEP, the World Bank and the World Resources Institute (WRI) contains studies contributed by over 175 scientists. The report identifies human population growth and increasing consumption as the two principal drivers of the decline of the world's ecosystems.

■ The National Telephone Cooperative Association, (NTCA), located in Arlington, Virginia, USA, released a major study on telecentre development around the world, titled *Initial Lessons Learned About Private Sector Participation in Telecentre Development*. The study, designed primarily to benefit regulators and indirectly to address donors and the private sector, contains discussions on implementation and ways to enhance telecentre development through increased public-private sector cooperation. The report focuses on six major case studies drawn from Peru, Benin, Uganda, South Africa, Senegal and Indonesia. The report may be downloaded, whole or by chapters and appendices, in a variety of formats, from the following site: www.ntca.org

VOICES (continued from page 13)

■ *Chemical Awareness* is a [newsletter](#) and an [NGO campaign](#) to move the chemicals policy in the European Union towards better control of harmful chemicals and implementation of the Precautionary Principle in common rules and regulations of the EU. A few figures from the web site :

- The global consumption of industrially produced chemicals has skyrocketed over the past decades. In 1930 the global production of organic chemicals was approximately 1 million tons a year. Today it is about 400 million tons a year.

- In 1981 a chemicals register was established and 100,106 chemicals were listed on it. The producers were, however, not obliged to report hazard data on the listed chemicals. And today it is not known how many of the 100,106 chemicals are still being produced or marketed.

- Out of the 100,000 chemicals listed on the EU list of existing chemicals, approximately 5,000 have been classified as hazardous. In addition industry has self-classified approximately 4,000. As for the rest—more than 85%—very little or nothing at all is known.

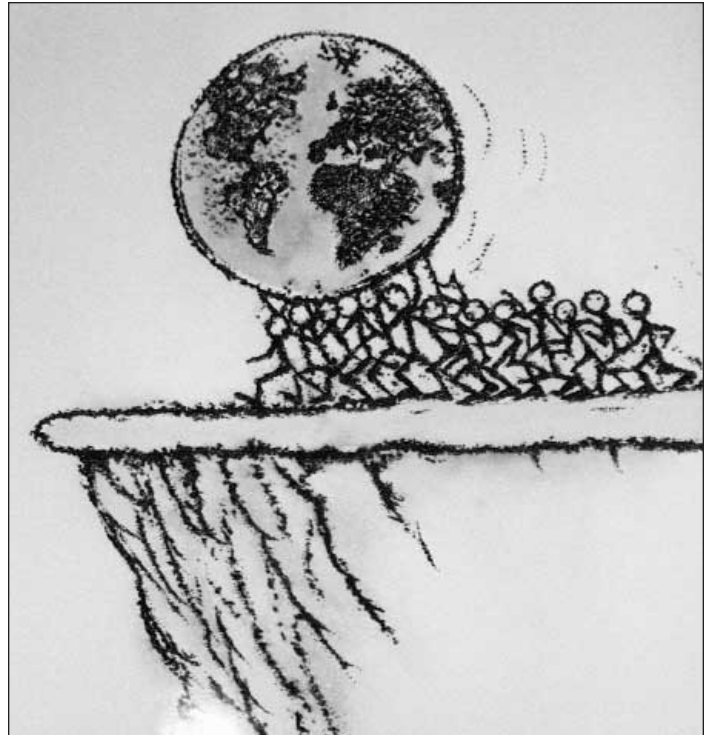
Current issues and chemical awareness information are available at: www.fbr.dk/chemaware/current/current.html

POINT OF VIEW (continued from back page)

halting the advance of preventable diseases, especially HIV/AIDS; ending discrimination, particularly by gender; and working to bring an end to deep and debilitating poverty. *“Children who grow up in a climate of murder, abduction and terror tend to reach adulthood with no idea of what it means to be able to learn, to play, to live safely at home with their families, or to socialise with their peers. And so they perpetuate the cycle of war and violence to the next generation, and the next and the next.”*—[Statement by Graça Machel, former Minister for Education of Mozambique, Johannesburg—6 May 2000.]

The two human rights activists call on world leaders in government, business, media, academia and other areas of civil society to become partners, using their influence to improve the lives of millions of children. A number of such partnerships already exist. Focused on specific issues, they are models for a more expansive approach.

One model program is the way Bangladesh dealt with violations of its child labor laws in the garment industry. Although child labor had been illegal in Bangladesh, one of the world's leading garment exporters, the dominant garment industry regularly employed between 50,000 and 75,000 children under 14, mainly girls. An agreement was signed in 1995 between the Bangladesh Garment Manufacturers and Exporters Association (BGMEA), UNICEF and the ILO. The parties agreed to: move all workers aged below 14 within four months to appropriate education programs; no further hiring of under-age workers; and offer the children's jobs to qualified adult family members.



UN Exhibit of Children's Drawings, Summer 2000

With financial support from UNICEF, two NGO's—Gono Shahjjo Shangstha and the Bangladesh Rural Advancement Committee (BRAC)—have been placing former child laborers in special schools where they receive health care, skills development training and a monthly cash stipend to compensate for their lost wages.

Viewing children as a natural resource to be protected and safeguarding their future has greater appeal for women than for men. Women have historically campaigned on behalf of children dating back to the international peace campaigns of the early twentieth century. Recently, Jody Williams and Princess Diana campaigned against landmines and the Million Mom March in Washington, DC, which took place on Mother's Day in May 2000, campaigned against children's access to guns. The underlying motivation for this and most other initiatives for children's welfare comes from the fact that mothers want to see their children become thriving adults. It is very likely that as more women around the world gain political office, the laws protecting children will not only be implemented but will also expand. Mandela, once again stands out among the world's leaders in the powerful support he lends to redress the circumstances of many of the world's youngsters.

“So it is, that as we look at the lives of the world's children, it is with the eyes of a man and woman who have seen what can be done to change the world when people act in the service of an ideal.” From: *At the Service of the Children of the World, A letter from Nelson Mandela and Graça Machel* [for further information visit the web site, <http://www.unicef.org/initiative/> or contact UNICEF].

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We have not inherited the world from our forefathers...we have borrowed it from our children. -Kashmiri Proverb

World Information Transfer, Inc. (WIT) is a not-for-profit (501c3) non-governmental organization in consultative status with the United Nations, promoting environmental health and literacy.

In 1987, inspired by the Chernobyl nuclear tragedy, WIT was formed in recognition of the pressing need to provide accurate actionable information about our deteriorating global environment and its effect on human health to opinion leaders and concerned citizens around the world.

WIT exercises its mandate through:

1. The publication of the *World Ecology Report*, a quarterly digest of critical issues in health and environment, published in five languages and distributed to opinion leaders around the world, and for free in developing countries.

2. Our annual conference on *Health and the Environment: Global Partners For Global Solutions* held at United Nations headquarters in New York since 1992. The world's leading authorities in the field of environmental medicine share their latest findings and discuss possible solutions with leaders in governments, business, organizations and the media.

3. Since 1995, WIT has been providing and promoting humanitarian relief to areas devastated by environmental degradation. Supplies and equipment have been sent to schools, hospitals and orphanages and assistance programs developed in areas contaminated by the Chernobyl fallout. These programs have been rapidly expanding since their inception.

4. Centers for Health & Environment providing centralized scientific data pertaining to health and sustainability issues. The objective of the Centers is to provide continuous monitoring, ongoing research, education and implementation of corrective programs. The first center was opened in Kiev in 1992 and moved to Lviv in 1996. The second center opened in Beirut, Lebanon in 1997.

WIT currently operates from headquarters in New York City with regional representative offices in Australia, Austria, Canada, China, Colombia, Egypt, Germany, Holland, Honduras, India, Iran, Israel, Lebanon, Nigeria, Pakistan, Philippines, Russia, Switzerland, Ukraine.

WIT is on the Executive Board of CONGO (Conference of Non-Governmental Organizations in Consultative Relationship with the United Nations).

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POINT OF VIEW: Children are a Natural Resource

On a recent summer cruise to the North Pole, vacationers and scientists saw a unique phenomenon: free flowing water at the pole. While the sight might have been starkly beautiful, it signaled the fact that global warming is no longer a prediction. The realities of a warming climate are upon us, in small measure at present, but certain enough for our national leaders to acknowledge the scientific evidence that could save our children's future.

If we consider healthy children as one of our natural resources—fundamental to the survival of the human species—then it is relatively easy to link climate change to our children's future. However, making this connection and seeing it reflected in law has been an uphill battle. If we look over the past eight years since the UN Conference on Environment and Development (UNCED), [1992, Rio de Janeiro], we see the international resistance to eliminating greenhouse gases, to establishing a ban on the production of the most poisonous Persistent Organic Pollutants (POPS), to protecting the world's old growth forests. While there has certainly been significant progress especially in the formulation of international statutes, implementing change to safeguard the global environment and thus global health has come slowly and reluctantly. Were the commitment to children foremost, governmental foot-dragging on implementing Agenda 21

would not be tolerated.

The world's national leaders and national parliaments, appear to regard the world's children as one of the global resources to be exploited. In fact, the increase in child labor and child prostitution points to a global interest, within the developed and developing worlds, to use children without regard to the future. Exploiting children for profit, sex or both is not much different in the long run than slashing and burning rain forests for timber or cattle grazing. While more children across the globe attend elementary school, and while infant mortality has declined, in the eight years since

UNCED, we have also seen a decline in the health of too many of our children due to the expanding shackles of poverty and illiteracy. If the interest in protecting our children and our future had been sincere, we would see child protection laws implemented and funding provided to achieve healthy, literate children. Rather, we see growing abuse in too many places.

Graça Machel and Nelson Mandela in cooperation with UNICEF have initiated a Partnership for Children Program, announced in May 2000, to foster and protect the rights of children. The program will address four challenges: how to ensure the rights of children affected by armed conflict;

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A lecturer on a tourist cruise captured this view of open water at the North Pole, a sight presumably never before seen by humans.

SOURCE: *NY Times*, August 19, 2000



HOW YOU CAN HELP:

WIT is a non-profit, international, non-governmental organization, in consultative status with the United Nations, dedicated to forging understanding of the relationship between health and environment among opinion leaders and concerned citizens around the world. You can help us with your letters, your time, and/or your donations.

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"Never doubt that a small group of thoughtful committed citizens can change the world. Indeed it's the only thing that ever has."

Margaret Mead

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