

SEATTLE POST-INTELLIGENCER

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P-I Focus: While we're off fighting terror, the planet's crumbling

Sunday, May 30, 2004

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PROFESSOR

History has shown that human societies often misjudge risk, and that is the case today. With world attention focused almost exclusively on terrorism and Iraq, another, even more serious security threat deepens -- the global environmental/humanitarian crisis.

While we remain virtually hypnotized by terrorism, humanity is quietly destroying the biosphere in which we live, ourselves and our future along with it. Just since 9/11, 25 million children died from preventable causes, the world's population grew by 200 million people and thousands of species went extinct. Also, 250,000 square miles of forest were lost, 50,000 square miles of arable land turned to desert, 8 billion tons of carbon were added to the atmosphere and air pollution claimed more than 4 million lives.

Our boat is sinking, we know the causes and consequences, and we know how to solve the problem. Yet policy-makers keep rearranging the deck chairs. Left unattended, this broad environmental/humanitarian crisis will foreclose any hope for security in the world. Certainly we must address terrorism, but just as certainly we must ensure our planet's sustainability.

Some of the key indicators of our current condition help put these relative risks in perspective.

Population

World population stands at 6.4 billion, more than four times its number at the start of the 20th century. Although some nations have reached population stability, many of the poorest, developing nations are far from it. The population -- growing by 74 million a year -- is projected to reach 9 billion by 2050, the additional billions coming almost exclusively in the poorest countries.

The largest generation of young people ever, some 1.7 billion ages 10 to 24, is just now reaching reproductive age. Where fertility remains high there is widespread poverty, discrimination against women, high infant mortality and lack of access to family planning, health care and education. More than 350 million women lack *any* access to family planning. Some religions oppose contraception, and female infanticide has become epidemic. Programs to stabilize population need about \$20 billion a year (about one week's worth of world military expenditures) but now receive about \$3 billion a year.

Consumption

Conspicuous consumption has become a homogenizing force across the developed world. Just since 1950, we have consumed more goods and services than all previous generations combined. The consumption of energy, steel and timber more than doubled; fossil fuel use and car ownership increased four-fold; meat production and fish catch increased five-fold; paper use increased six-fold, and air travel increased 100-fold.

In the United States, where malls are more prevalent than high schools, shopping has become the primary cultural activity. Although world economic output continues to increase, when real costs are calculated, sustainable economic welfare has been in decline since the '70s. One measure of resource consumption of humanity -- our "ecological footprint" -- surpassed sustainable levels in the late '70s, and for an average American is now 20 times that of a person in some developing countries.

Studies estimate that, if the developing world were to consume at *our* rate, another five or six planets would be needed to sustain this level of consumption. The United Nations says that a 10-fold reduction in resource consumption (or a 10-fold increase in energy/material efficiency) in industrialized countries will be needed for adequate resources to be available for developing countries.

Rich-poor divide

The unequal distribution of consumption adds to environmental, social and economic damage as well. The gap in per-capita income between rich and poor nations has doubled in the past 40 years. The upper 20 percent in economic class -- Europe, Japan, North America -- account for more than 80 percent of the material and energy consumed globally while the poorest 20 percent account for just 1 percent of consumption. The world's 350 billionaires have a combined net worth exceeding that of the poorest 2.5 billion people. Those poor live on less than \$2 a day and lack basic sanitation, health care, clean water and adequate food.

Despite unprecedented economic expansion of the '90s, today some 900 million adults are illiterate and 30,000 kids die every day from preventable causes. Poor countries pay more than \$350 billion a year just to service the interest on their debt to developed countries (a total of \$2.4 trillion) and often try to raise this money through environmentally destructive activities. Some countries spend more to service their foreign debt than on education and health care combined.

Biodiversity

Ecologists fear we are losing between 50 and 150 species each day, a rate thousands of times higher than the evolutionary background extinction rate of about one species a year. Some estimate that we have lost perhaps 600,000 species since the "biotic holocaust" began around 1950; if present trends continue, half of all species on Earth would be extinct in the next 50 years. Overhunting, invasive species, pollution and climate change are factors in this sixth mass extinction event, but by far the greatest cause is habitat loss. The lost ecological services could be devastating. It may take 5 million to 10 million years for biological diversity to recover.

Forests

Half of Earth's original forest cover is gone, and an additional 30 percent is degraded or fragmented. Only 20 percent of the original forest on Earth remains today as large, relatively undisturbed "frontier forests." And half of this frontier forest is threatened by human activity, mostly by logging. Another 100,000 square miles of forest is lost each year, mostly in the tropics, and only a very small amount of this forest loss is offset by regrowth.

Since 1960, about 30 percent of the Earth's tropical forests have disappeared and with them, thousands of species. Between 50 percent and 90 percent of the terrestrial species inhabit and depend upon the forests, and more than half of the threatened vertebrate species on Earth are forest animals. The link is clear: lose forests -- lose species.

Food

Today about 1 billion people are undernourished and 600 million are overnourished. The United Nations lists 86 countries that can't grow or buy enough food and predicts that by 2010 global food supply will begin to fall short of demand.

More than 6 million people a year, mostly children, die from malnutrition. Grain production is declining and environmentally damaging meat production continues to increase. The 1.3 billion cattle (weighing more than all of humanity) have degraded a quarter of the planet's land surface.

More than 10 percent of world farmland and 70 percent of the world rangeland is degraded, and poor agricultural practices result in the loss of more than 20 billion tons of topsoil a year.

Water

Fresh water may well be the most precious substance on Earth. People use about half of all available fresh water, causing aquifers to shrink around the world.

Some 70 percent of all water used by humans goes to irrigation; most simply leaks and evaporates from inefficient irrigation systems. Some water tables, such as the north China plain, drop by more than a meter a year. Two billion people have no choice but to drink water contaminated with human and animal waste and chemical pollution.

The World Health Organization estimates there are 1.5 billion cases of diarrhea a year in children from contaminated water, causing 3 million deaths.

Today, water supplies in 36 nations in Africa, Asia and the Middle East are not sufficient to meet grain production needs. In China, 400 cities suffer from acute water shortage and half of the nation's rivers are polluted. The world lost half of its wetlands in the past century, and more than 22,000 square miles of arable land turns into desert each year. It's projected that in 20 years, the demand for water will increase by 50 percent and two-thirds of the world population will be water-stressed.

Atmosphere

Air pollution exceeds health limits daily in many cities in the world. Some 5,000 people a day die from air pollution, and kids in some cities inhale the equivalent of two packs of cigarettes every day just by breathing the air.

Carbon emissions from burning fossil fuel now stand at 6.5 billion tons a year (four times 1950 levels), resulting in atmospheric carbon dioxide concentrations 33 percent greater than pre-industrial levels.

Global warming is no longer seriously doubted, and nine of the hottest years on record have occurred since 1990. The warming has accelerated the melting of polar ice caps and mountain glaciers; a rising sea level has inundated some Pacific islands, and more frequent and severe droughts, storms and floods cost more than \$50 billion and 20,000 lives a year. The Intergovernmental Panel on Climate Change concluded most of the warming over past 50 years was human-induced.

Oceans

Once thought to be inexhaustible, the Earth's oceans are more polluted and overexploited than at any other time in history. Seventy percent of world fish populations are either overfished or nearly so. Marine pollution has increased dramatically, and warming ocean temperatures have killed more than a fourth of the world's coral reefs. The 1998 coral "bleaching" event killed almost half of all Indian Ocean corals in just a few months, and Australia's Great Barrier Reef is threatened with complete collapse by the end of the century if warming continues.

If we connect these dots, the picture is clear: We are approaching a breaking point on the home planet.

The fate of the Earth may well be decided in our lifetime, and we all should begin behaving as though we are living together on one small, precious, life-sustaining spaceship, which indeed we are.

The solution is straightforward -- stabilize population, reduce consumption and share wealth. We know exactly how to do this; we just need to pay for it.

The United Nations says \$40 billion a year -- about what consumers spend on cosmetics -- would provide everyone on Earth with clean water, sanitation, health care, adequate nutrition and education.

The secretary general of the 1992 Earth Summit cautioned, "no place on the planet can remain an island of affluence in a sea of misery ... we're either going to save the whole world or no one will be saved."

Without urgent attention, the global ecosystem will continue to unravel and we'll consign future generations to a nightmare of deprivation, insecurity and conflict.

It's time to broaden our understanding of security beyond just that of terrorism to securing a sustainable future for spaceship Earth.

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