



# World Ecology Report

Critical Issues in Health and the Environment

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*By I. Gedengurah Swajaya*



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## **SPECIAL FOCUS: [www.ICT.un](http://www.ICT.un)**

### **Information Communication Technology and the United Nations**

The first authoritative global plan to fully incorporate public and private sector viewpoints on overcoming the lag in information and communication technology (ICT) found in most developing countries became the center of attention last year within the United Nations.

In April 2000, the UN hosted a high level panel consisting of sixteen experts chosen from government, business, academia and NGOs. The Panel issued a Report which called upon the UN to play a leadership and catalytic role in bridging the digital divide and accelerate development by harnessing the development potential of ICT. To this end, the panel recommended bringing together key stakeholders in an international Task Force and a Trust Fund



**SOURCE:** *The Atlantic Monthly*, October 1999

that it would administer. These arrangements would function under specific mandate and composition outside the normal structures of the UN.

In July 2000, the Economic and Social Council (ECOSOC) after examining the ICT issue, adopted a Ministerial Declaration that recognized

the key role of partnerships, involving national governments, bilateral and multilateral development agencies, the private sector and other relevant stakeholders in putting ICT in the service of development. In September, the Millennium Summit endorsed this Ministerial Declaration.

This ICT initiative is a groundbreaking one for the UN for several reasons. The setting up of this UN Digital Task Force would establish a pivotal role for the UN system in the ICT area. It would also provide an interface between the information technology community and the development community which would bring together the private sector, the foundations, and the donor community to develop innovative modalities to bring ICT capability to the developing world.

#### **What are they and why are they important?**

ICTs are a complex and heterogeneous set of goods, applications and services used for producing, distributing, processing and transforming information. Included in this set are the outputs of industries as diverse as telecommunications, television and radio broadcasting, computer hardware and software, computer services and electronic media (e.g. Internet, electronic mail, electronic commerce, computer games).

ICTs are a systemic, pervasive set of technologies that are associated with fundamental institutional, social and economic restructuring. Comparisons with other kinds of technologies shows that ICT goods and services took a much shorter time to reach comparable percentage of the population in wealthy countries. For example, as reported by the development

division of the International Telecommunications Union average compound annual growth rates over the period 1990–1998 for fixed telephone lines were 6%, while they were 52% for mobile subscribers and 81% for Internet hosts.

When these growth rates are translated into user numbers, the figures present an even more dramatic picture. At the rate of growth reported, it took only eight years for the Internet to grow from a network consisting of 213 host computers supporting only several thousand users, to its present estimated size of 56 million Internet hosts and 190 million users. The number of countries connected to the global network has also grown from just over 20 in 1990 to more than 200 in July 1999.

As a result of this rapid diffusion of ICTs, the sector has grown in size, scale and importance. The ICT sector forms part of what is referred to as the knowledge sector, which is the fastest growing area of the global economy. Between 1980 and 1994, the share of high technology products in international trade doubled, from 12% to 24%. Statistics for the telecommunications equipment and services industry, estimates its size at USD \$748 billion, with the expectation that by 2000, it would have grown to USD \$1 trillion. At this size, the telecoms industry is the third largest industry after healthcare and banking.

The producers of ICT goods and services are large transnational corporations and the supply markets are very concentrated around a few large firms. As a result, a few very large players, who hold the power and set the rules, dominate the ICT sector. The Human Development Report which is compiled by the UN's Development Program, states that "by 1995 the world's top 20 information and communications corporations had combined revenue of more than \$1 trillion—equivalent to the GDP of the United Kingdom." The ratios of concentration in the telecommunications and computer industry are extraordinarily high, even compared with other high technology sectors. In 1998 the top 10 corporations controlled 60% of the total revenues of the computer industry, and a whopping 86% of the total in the telecommunications sector.

### **Globalisation or Polarisation**

- Only 2% of the world's population is part of the connected global village.
- Information and communication networks are concentrated in very few countries.
- 25% of all countries in the world have penetration levels for fixed telephone lines of less than one telephone for every 100 persons.
- Industrial countries, home to 15% of all people account for 88% of all Internet users.
- The United States has more computers than the rest of the world combined and more computers per capita than any other country in the world.
- Just 55 countries account for 99% of global spending on information technology.

### **Uneven Growth**

In the last decade of the 20th century, the process of glob-

alisation has significantly altered the nature of economic, political and cultural relations among nations, economics and people. It is now widely accepted that the changes inherent in this process are not unequivocally positive. Just as globalisation has produced winners and losers depending on the positioning of groups and individuals vis-à-vis this complex set of changes, so too with rapid diffusion of ICTs.

The positive benefits of diffusion of ICTs—productivity gains, job creation, improvements in wealth, enhancement of well-being—are for the most part, limited to wealthy countries. In those countries, the rapid diffusion of ICTs has been facilitated by technological innovation, economic restructuring in highly developed countries, reorganization of firm-level production processes, changes in functioning of markets and social and political change, and a series of feedback effects, has produced material and social gains.

Policy makers have been actively promoting growth of the ICT sector and seeking to maximise the positive benefits of ICTs. Increasingly their attention is turning to managing the negative social consequences of use of ICTs and ensuring that there is equity in access and distribution. For example, European policy makers have sought to understand how ICT development can produce social consequences that are undesirable and can reinforce existing social inequities in order to produce guidelines for improving these negative effects. Unfortunately, in developing countries, policy makers often lack the capability to make the series of sophisticated interventions necessary to promote and manage the rapid growth of the ICT sector and face the burden of uneven pace of development and few degrees of freedom.

Despite the very rapid diffusion rates, the pace at which geographic expansion of the ICT sector has taken place is still very slow. Much of the growth in ICT markets comes from rich countries. Figures for distribution of Internet hosts show that in July 1999, North America and Canada accounted for 65.3%, followed by Europe at 22.4%, trailed by Australia, New Zealand and Japan at 6.4% and all other countries accounting for only 5.9% of Internet hosts. While these figures are only for one ICT application, it is indicative of the broader trend for concentration of the so-called global information society in the wealthy countries of the world. This data also indicates that the potential for unevenness in growth rates exist even among OECD countries.

### **Electronic trade barrier**

The Report produced by the High Level Panel of Experts found that E-commerce is tying individuals, firms and countries closer and closer together. But the 1.5 billion web pages in existence, with almost two million more appearing on the Internet every day, and the total e-commerce exchanges on track to reach \$7 trillion in 2004, are produced by less than five per cent of the world's population. Under these conditions, according to the Report, "e-commerce is rapidly becoming a trade barrier for those who are not connected."

The international community, working in concert with national governments, private business and civil society, is fully capable of reversing the current alarming trend of the growing digital divide for the 80 per cent of the world's pop-

ulation who are currently unconnected, the report proposed.

But that, the 17-member team warned, although developing countries have a great potential to compete successfully in the new global market, "unless they promptly and actively embrace the ICT revolution, they will face new barriers and the risk of not just being marginalized, but completely bypassed."

The Expert Panel Report recounts various novel business models and innovative approaches now in use to apply information technologies where they are most needed. These include:

- GrameenPhone of Bangladesh, [www.grameenphone.com](http://www.grameenphone.com) where rural women rent out mobile phones in their villages. It enables farmers to check the latest crop prices and helps wives maintain contact with their husbands who work overseas.
- Little Intelligent Communities (LINCOS) of Costa Rica, [www.lincos.net](http://www.lincos.net). These are digital community centers that give villagers access to telemedicine, the Internet and electronic trading.
- Argentina's national student portal, [www.educ.ar](http://www.educ.ar) which will provide the country's 10 million students with Internet access. Students comprise one-third of the country's population. Argentina is home to half of the Internet start-ups in Latin America.
- By using digital technologies, a company called Viatru, [www.viatru.com](http://www.viatru.com), is linking artisans to global markets. In the process, they are preserving endangered cultures while at the same time providing them with better sources of income.
- PRIDE AFRICA, [www.prideafrica.com](http://www.prideafrica.com), operates micro-finance programs in six East African countries from their headquarters in Nairobi, Kenya. It is estimated that serving as little as 20 percent of the global market for small loans can generate \$15 billion annually.
- The Development Alternatives Group developed TARAhaat, [www.tarahaat.com](http://www.tarahaat.com), as the first major Internet portal designed from the ground up to meet the needs of rural villagers in India.

### Transforming ICTs for gender justice

The agenda facing gender justice advocates is the transformation of the ICT sector so that its effects produce benefits across all countries and are available to women and men on a fair and equitable basis. This is crucial. In fact continuing gender discrimination in education and training do not augur well for equal opportunity to education and training in the disciplines associated with the ICT sector. In all developing country regions of the world, female adult literacy levels, secondary school enrollment and rates of enrollment in science are less than that for males.

Women's use of ICTs is not equal to their share in the world's population. One set of figures on use of ICT goods and services states that, "Women accounted for 38% of users in the United States, 25% in Brazil, 17% in Japan and South Africa, 16% in Russia, only 7% in China and a mere 4% in the Arab States."

The trend for differentiation in use starts early, as in the United States, boys are five times more likely to use home computers and parents spend twice as much on ICT prod-

## WIT's Presentation to the High Level Segment of ECOSOC during July 2000 Information Communication Technology

### RECOMMENDATIONS:

**1. Education:** To take advantage of the opportunities offered by the expanding ICT, governments must increase access to basic education ensuring that both girls and boys become literate in language and mathematical skills. To immediately bring the next generation into the information age, we recommend education promotion partnerships among government, ICT businesses, NGOs and academic institutions to bring laptop or desk top computers with internet connections into schools, libraries and community centers. Children take to computers easily and with available alternatives to the web of electrical and telephone lines, it is technologically feasible for children around the world to be exposed to computers and ICT quickly. Since English is the current computer language, introducing children to computer use early will also afford them the advantage of learning basic ICT related English, currently a necessary skill.

In our view, the major impediments to education partnerships are 1) fear of the democratization of knowledge; 2) fear of the private sector based in the developed nations; 3) misunderstanding of the technological potential for economic development. Movable type (first invented in China) and the printing press, the transistor and the radio, and the television, changed the nature of information and expanded access to knowledge. Like its predecessors, the computer and the Internet are creating an information revolution that is democratizing knowledge by the spread of uncensored information. Freedom of information and its access must be maintained as ICT expands.

**2. Business Environment:** Creating a favorable business climate to encourage the local development of small companies and entrepreneurial activity requires governmental support. However, the indebtedness of many developing nations must be forgiven in order for economies to grow on the path of recovery and vigor.

Currently, the young ICT entrepreneur from a developing nation leaves for the US or another user friendly nation to start up a promising ICT business. Creating a business climate favorable to risk-taking would discourage the "brain drain". However, corruption, censorship, and war subvert an attractive business environment. We recommend that instituting good governance practices be a condition of debt forgiveness.

**3. Social Change:** In the areas of health and the environment, the benefits of ICT are especially clear. Through the Internet, medical knowledge can quickly be provided to medical centers, clinics and hospitals on specific and urgent problems as they are occurring. The ICT industry pollutes less and creates a wealth of jobs much less harmful to health than traditional industries.

ucts for their sons as they do for their daughters."

In developing countries women will face additional barriers such as lack of income, lack of time and lack of training all of which restrict levels of usage. The cultural impacts of ICTs under conditions of high usage and low usage are not identical, which means that if women face restrictions in use of ICTS, the expected benefits of extension of communication networks, access to wider scope of information etc. will not materialise. Therefore strategies to remove barriers for women's access to these information and dissemination media must be differentiated across countries.

UNIFEM, the UN development program for women has several initiatives to connect women to the information super-highway. One is a new website, Arab Women Connect, part of a regional strategy to increase Arab women's use and influence over new ICTs. The project is funded by the Netherlands and is in use by women's groups in Lebanon, Syria, Palestine, Jordan, Egypt, Yemen, United Arab Emirates and Qatar.

In Zimbabwe, an initiative is designed to help women running small and micro enterprises in developing countries to benefit from ICTs. It is similar to projects piloted in Nepal, Ecuador, Albania, Romania and the Philippines.

### **Key elements from the "International ICT Action Plan"**

- The United Nations should create, under the leadership of the UN Secretary-General, but outside the regular UN organizational structures, an ICT Task Force charged with bringing together international agencies, private industry and foundations and trusts to facilitate the expansion of the ICT market in developing countries.
- A development fund administered by the Task Force should be amassed from hundreds of millions of dollars solicited from such sources as the UN Fund for International Partnerships (the so-called Turner Fund). Private sector representatives on the panel suggest that the ICT industry is likely to be willing and able to match contributions. Funding would be further leveraged by making grants contingent on being matched with resources of the benefiting country, producing a final return of four dollars on every dollar raised by the United Nations.
- The United Nations should work with financial institutions and creditor governments to have one per cent of the debt of each developing country written off, if the equivalent amount is applied to ICT development. In a similar manner, countries should receive international financing for ICT on the basis of national progress in carbon-fixation (anti-greenhouse effect) activities.

The panel also suggests that the United Nations might serve as an arbitrator or facilitator with respect to certain key legal and policy issues, such as Internet security, Member States' claims to top-level domain names, and representation of developing countries in existing Internet administrative procedures.

The panel concludes that "the international community, especially the United Nations, has a special obligation to assist countries in maximizing the benefits they can secure from ICT." They recommend bringing "greater coherence



**SOURCE:** UNESCO Sources, June 2000

and synergy" to the ICT activities currently undertaken by individual organizations of the UN system, including the World Bank, and by the European Union, the Organization for Economic Cooperation and Development and numerous other multilateral and bilateral organizations.

One of the guiding principles in developing the terms of reference and the modalities of operation of the Task Force is the necessity to ensure complementarity and synergy of its activities with those of other international initiatives in this field, in particular the "Dot.force" that was launched by the G8 and has been set up with the World Bank and UNDP acting as its secretariat. It is important that these two initiatives do not remain parallel but are integrated into a unique global effort. This could be achieved by building the Task Force on the initial findings of the Dot.force.

Another major principle, perhaps the most important, is that all potential partners should be involved including, in particular, the private sector, foundations and civil society.

### **Conclusion**

In the areas of health and the environment, the benefits of ICT are especially clear. Through the Internet, medical knowledge can quickly be provided to medical centers, clinics and hospitals on specific and urgent problems as they are occurring. The ICT industry pollutes less and creates a wealth of jobs much less harmful to health than traditional industries. However, to reap the obvious benefits of technological change traditions and policies that resist new tools have to re-adjust. Archaic cultural barriers may interfere with economic and social growth in the short run, but in the long run, knowledge finds its way. The fear of change, especially rapid technological change, is quite understandable as a threat to power. However, addressing the fear and finding the courage for change are the surest ways to increase national prominence in the Information Age.

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## HEALTH AND ENVIRONMENT

# Environmental Change, Bio-Diversity and the Loss of Biological Controls

*"Epidemics are like sign-posts from which the statesman of stature can read that a disturbance has occurred in the development of his nation—that not even careless politics can overlook."*

*Dr. Rudolf Virchow, 1848*

Today the activities of one species, humans, are reducing the diversity of all others and transforming the global environment. Ecosystems subjected to the stresses of "global change" (including climate change and altered weather patterns, the depletion of stratospheric ozone, deforestation, coastal pollution, and marked reductions of biological diversity) become more susceptible to the emergence, invasion, and spread of opportunistic species. When subject to multiple stresses, natural environments can exhibit symptoms that indicate reduction in resilience, resistance, and regenerative capabilities.

Several features of global change tend to reduce predators disproportionately, and in the process release prey from their biological controls. Among the most widespread are:

- Fragmentation and loss of habitat
- Dominance of mono-cultures in agriculture and aqua-culture
- Excessive use of toxic chemicals
- Increased ultraviolet radiation, and
- Climate change and weather instability.

The breaking up of large tracts of forest or other natural wilderness in smaller and more diverse patches reduces the available habitat for large predators, and favors many pests. Land and climate changes may act synergistically, as when constricted habitat frustrates a species' ability to migrate north or south to survive altered climatic conditions. Extensive deforestation and climate anomalies—such as the delayed monsoon rains that resulted from this year's El Niño—can also act synergistically, with costly results. A ready example is the massive haze from burning that covered much of Southeast Asia causing acute and chronic respiratory damage and losses in trade, investment, and tourism—the latter, a \$26 billion a year industry.

The dedication of land to monoculture, that is, the cultivation of single crops with restricted genetic and species diversity, renders plants more vulnerable to disease. Simplified systems are also more susceptible to climatic extremes and to outbreaks of pests.

Over-use of pesticides kills birds and beneficial insects, as noted in 1962 by Rachel Carson. The title of her book, *Silent Spring*, made reference to the absence of the chorus of birds in springtime, and the resulting resurgence of plant-eating insects—that had also evolved a resistance to pesticides. The worldwide response to her message transformed agricultural policies and regenerated more enlightened pest management. But today, the heavy application of pesticides still carries risks to both human health and natural systems. Over-use of pesticides in Texas and Alabama to control the boll weevil has alarmed farmers, for friendly insects such as spiders and ladybugs have died off and other plant pests have rebounded.

One of "nature's services" is to keep opportunistic species under control. Maintaining this service entails sustaining the health and integrity of ecosystems. One of the essentials is genetic and species bio-diversity to provide alternative hosts for disease organisms.

Another is sufficient stability among functional groups of species (such as recyclers, scavengers, predators, competitors, and prey) to ensure the suppression of opportunities and preserve essential ecological functions. Habitat is crucial.

Stands of trees interspersed with agricultural fields, for instance, support birds that control insects; clean ponds with healthy populations of fish serve to control mosquito larvae; and adequate wetlands filter excess nutrients, harmful chemicals, and microorganisms.

Population explosions of nuisance organisms, be they animals or plants or microbes, often reflect failing ecosystem health: a sign of systems out of equilibrium, in terms of the balance of organisms required to perform essential functions. The damage done, moreover, can be cumulative, for multiple-stressed systems are less able to resist and rebound when other stresses come along.

Rodents, insects, and algae are thus key biological indicators of ecosystem health. Their populations and species compositions respond rapidly to environmental change—particularly to an increase in their food supply, or a drop in the number of their natural predators. These indicator species are also linked to human health.

The present rate of species extinction around the world is a potential threat to human health when one considers the role that predators play in containing infectious disease. From the largest to the smallest scales, an essential element in natural systems for countering stress is a diversity of defenses and responses. Thus, animals that seem redundant may serve as "insurance" species in a natural ecosystem, providing a back-up layer to resilience and resistance when others are lost from disease, a changing environment, or a shortage of food or water.

In 1996, the World Conservation Union reported that one-fourth of all species of mammals—and similar proportions of reptiles, amphibians, and fish—are threatened. The current rate of extinction (estimated at 100 to 1,000 times threat of loss in the pre-human era) falls heaviest on large predators and "specialists," and thus may initially favor the spread of opportunistic species and the diseases that come with them.



**The red, furry orangutan, found mainly in Indonesia faces extinction in the wild due to powerful regional timber barons who encourage local lawlessness.**

*Source: The Economist, March 10, 2001*

## FOOD FOR THOUGHT: Climate Change

UNEP's global warming report details impacts on people and nature, describing in greater detail than ever before how global warming could impact civilization and the natural environment.

Working Group I of the Intergovernmental Panel on Climate Change (IPCC) confirmed the increasingly strong evidence for humanity's influence on the global climate. It also projected that the globally-averaged temperature of the air above the earth's surface would rise by 1.4–5 degrees Centigrade over the next 100 years.

Working Group II analyzed how this general warming will affect Africa, Asia, Europe and other regions over the coming decades. While highlighting remaining uncertainties, it details expected changes in weather patterns, water resources, the cycling of the seasons, ecosystems, extreme climate events, etc. This report is an objective assessment of the most up-to-date, peer-reviewed scientific research available.

"Climate change is a stress that will be superimposed over expected population and other environmental stresses," said Professor G.O.P. Obasi, Secretary-General of the World Meteorological Organization (WMO), which, together with the United Nations Environment Programme (UNEP), launched the IPCC in 1988. "Life as we know it today on the planet will be forced to respond to the shift to a warmer world. We have to use mitigation and adaptation strategies to face the changes while not forgetting to improve our knowledge basis. Every natural and socio-economic system appears to be vulnerable to climate change. However, it is the least developed countries that are the most vulnerable."

Klaus Toepfer, Executive Director of UNEP said, "In addition to minimizing global warming through cuts in greenhouse gas emissions, we need to understand the powerful changes our industrial economy has set into motion and anticipate them. We must start helping vulnerable species and ecosystems adapt to new climate condition. Governments should already factor these new conditions into their long-term investment and planning decisions."

Many of the physical changes that scientists have assessed as being consistent with global warming can already be witnessed today. The extent of Arctic sea-ice has shrunk by about 10–15 per cent, while Antarctic sea ice retreated south by 2.8 degrees of latitude from the mid 1950s to the early 1970s. Alaska's boreal forests are expanding northwards at a rate of about 100 kilometres per 1 degree Centigrade rise. Ice cover on lakes and rivers in the mid-to-high northern latitudes now lasts for about two weeks less than it did 150 years ago.

Massive changes in the Arctic, which are likely to have dramatic impacts on the world's weather systems, fisheries, wildlife and people living in the far North, are forecast by scientists studying global warming. In the Arctic the extent of sea ice has declined by nearly a third over the past 150 years.

Scientific research indicates that the area of summer sea ice in the Arctic Ocean could thin by as much as 60 per cent if carbon dioxide levels reach double their pre-industrial levels in the atmosphere. The summer season, during which the ice retreats far offshore, will increase from 60 days to 150 days according to this model. At the moment sea ice retreats from the coastline of countries in the Arctic by between 150km and 200km. By 2050 the sea ice might retreat up to 800km as a result of global warming. The extent of permafrost, the solid layer of ice and soil, in the Arctic could be reduced by up to 22 per cent as a result of global warming. In Canada up to half of the present-day cover of permafrost could be lost if CO<sub>2</sub> levels

double. Increased snow and rainfall and widespread melting of ice and permafrost may lead to higher levels of freshwater entering the Arctic Ocean. This freshening of the Arctic Ocean could have important impact on ocean circulation. The formation of sea ice, which leads to salty, heavy water, sinking down deep into the ocean, also plays a key role in driving deepwater currents which in turn affect weather patterns and climate across the globe.

In the European Alps, some plant species have been migrating upwards by one to four meters each decade. Across Europe, the growing season in controlled mixed-species gardens lengthened by 10.8 days from 1959 to 1995. In Europe and North America, migratory birds now arrive earlier in the spring and depart later in the autumn. Butterflies, beetles, dragonflies, and other insects are now found further north, where it was previously too cold for them to survive.

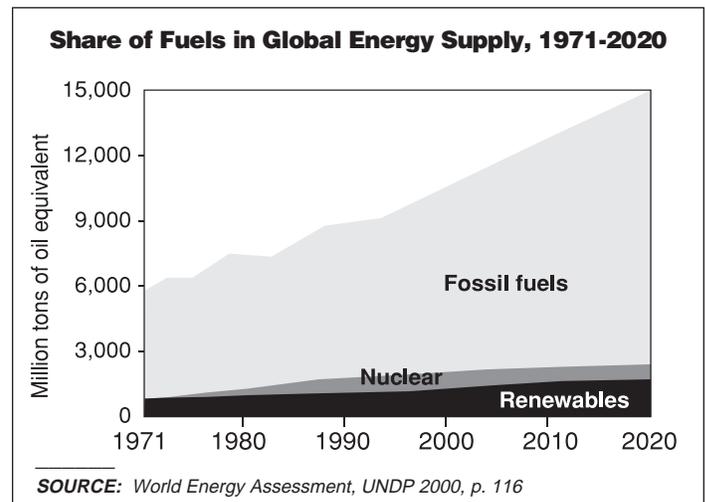
In large parts of Eastern Europe, European Russia, central Canada and California, peak stream flows have shifted from spring to winter, as more precipitation falls as rain rather than snow. In Asia, 67 per cent of the glaciers in the Himalayan and Tianshan mountain ranges (which feed some major rivers) have retreated during the past decade.

These trends are expected to continue through the 21st century and beyond. In parts of Africa, desertification is expected to worsen in response to reduced rainfall, runoff and soil moisture. In many Asian countries, declines in agricultural productivity will diminish food security, while sea-level rise and an increase in the intensity of tropical cyclones could displace tens of millions of people in low-lying coastal areas. In Australia and New Zealand, water is likely to become a key issue due to projected drying trends over much of the region.

The risk of flooding will increase across much of Europe. In Latin America, floods and droughts will become more frequent and vector-borne infectious diseases will expand pole-ward. In North America, sea-level rise is expected to enhance coastal erosion and flooding and the risk of storm surges, particularly in Florida and along much of the US Atlantic coast.

Small island states are likely to be among the countries most seriously affected by climate change. In all regions, developing countries will have difficulties adapting to climate change.

Global warming may cost the world several billion dollars a year unless urgent efforts are made to curb emissions of carbon dioxide and the other gases linked with the "greenhouse effect."



**Sources of Industrial Carbon Dioxide Emissions 1995 and 2035**

	1995	2035
<b>Developing World</b>	27%	50%
Middle East	3%	5%
Africa	3%	8%
Latin America	11%	6%
China	11%	17%
Other Asia	6%	14%
<b>Industrialized World</b>	73%	50%
United States	22%	15%
Western Europe	17%	12%
Asia	7%	4%
Eastern Europe/ Former Soviet Union	27%	19%

**SOURCE:** World Energy Assessment, UNDP 2000, p. 92

In some low lying states such as the Maldives, the Marshall Islands and the Federated States of Micronesia the losses linked with climate change could, by 2050, exceed 10 per cent of their national wealth or Gross Domestic Product (GDP).

Globally some of the biggest losses will be in the area of energy. The water industry world-wide will be facing (US) \$47 billion of extra costs annually by 2050. Flood defense schemes to protect homes, factories and power stations from rising sea levels and storm surges may cost on average one billion dollars per year. It is estimated that in low lying countries like the Deltas of Bangladesh and Small Island States, the cost could be significantly higher.

Eco-system losses, including mangrove swamps, coral reefs and coastal lagoons, could run at over \$70 billion by 2050. Such areas are vital nurseries for fish, upon which many poor communities rely for protein, as well as being homes to precious marine life. Agriculture and forestry could lose up to \$42 billion world-wide if carbon dioxide levels reach twice their pre-industrial concentrations as a result of droughts, floods and fires. Natural disasters, including more frequent cyclones and hurricanes, could add an additional (US) \$3 billion to the globe's climate-related bill. There are also expected to be losses and additional costs in the construction, transport and tourism industries.

Europe's biggest climate related losses will be in respect to higher levels of mortality and health costs. These may, annually, be running at \$21.9 billion. Water management may create extra costs in health related measures reaching nearly \$30 billion a year by 2050. Among the former Soviet bloc countries the biggest climate-related costs, estimated at some \$6 billion a year, are likely to accrue from losses in agricultural production. China's biggest losses, some \$7.8 billion, are also likely to be agricultural.

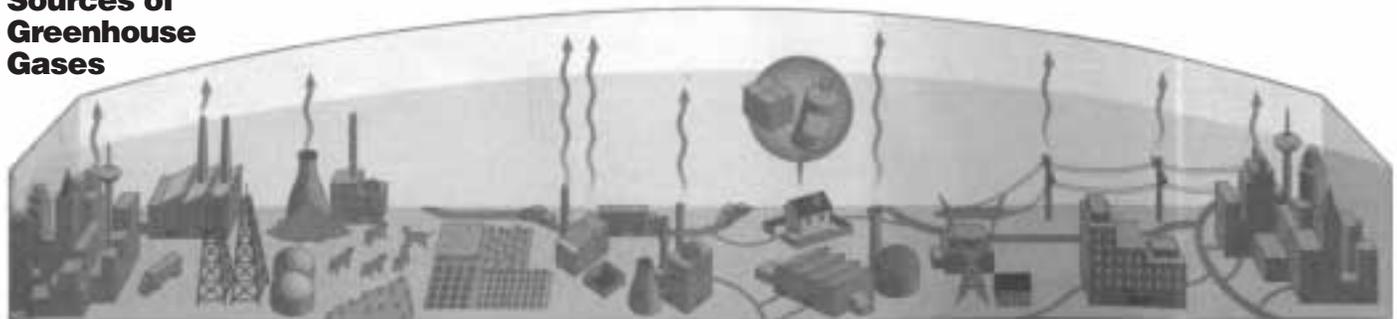
UNEP scientists are developing an early warning system to try and reduce the misery and loss of life as a result of climate related natural disasters. It hinges on pinpointing areas where deforestation, destruction of reefs and other environmentally damaging actions are making communities more vulnerable to natural catastrophes including floods, forest fires, mud slides and earthquakes. They have begun drawing up maps of the globe showing where people are vulnerable to such catastrophes. The first maps have now been completed for Central America.

UNEP is working closely with other United Nations organizations, such as the World Meteorological Organization, with its expertise in climate forecasting, Food and Agricultural Organization which is involved with the way land is used for food production and the United Nations Centre for Human Settlements (Habitat) in planning cities that are safer and less vulnerable to catastrophes.

"The time to act is now. We must all work to reduce emissions of greenhouse gases. But mitigation is not enough. The world has already signed up to a certain level of human-induced, climate change, as a result of over a century of industrial emissions primarily from the developed world...With careful planning and respect for the environment we can do much to protect the world's citizens. A modest but sustained investment by governments in disaster mitigation and emergency responses can save lives and avoid tragedies," said Mr. Toepfer.

**SOURCES:** [www.unfccc.int](http://www.unfccc.int), [www.wmo.ch](http://www.wmo.ch), [www.unep.ch/conventions/info/infoindex.htm](http://www.unep.ch/conventions/info/infoindex.htm), [www.grid.unep.ch/gis](http://www.grid.unep.ch/gis)

**Sources of Greenhouse Gases**



**CO<sub>2</sub>** (Carbon Dioxide)

RESIDENTIAL & COMMERCIAL: Heating and cooling  
INDUSTRY: Steel mills, aluminum smelters, cement plants, petroleum refineries, etc.  
TRANSPORTATION: Fuel burning  
ENERGY PRODUCTION: Oil and gas production

**CH<sub>4</sub>** (Methane)

ENERGY: Natural gas and oil production, coal mining  
WASTE MANAGEMENT: Decomposition of wastes in landfills  
AGRICULTURE: Digestive processes of ruminant livestock, manure decomposition, rice cultivation

**N<sub>2</sub>O** (Nitrous Oxide)

AGRICULTURE: Nitrogen fertilizers, nitrogen-fixing crops, livestock manure, waste management and runoff  
ENERGY PRODUCTION: Emissions from fossil fuel use  
INDUSTRY: Chemical manufacturing and wastewater treatment process

**CFC's, HFC's, PFC's**

CFC's: Aerosol cans, packaging material, refrigerants  
HFC's: Refrigeration, fire protection  
PFC's: Emissions from the manufacture of semiconductors and from aluminum smelting

**SF<sub>6</sub>** (Sulfur Hexafluoride)

INDUSTRY: Electrical equipment insulation, magnesium production and medical treatments like asthma inhalers

**Black Carbon Soot**  
(not a gas)

Incomplete combustion of fossil fuels and vegetation fires

**SOURCE:** NY Times, 10/3/00

## CHERNOBYL UPDATE

# Depleted Uranium

The unfolding story of depleted uranium in the Balkans reminds us that truth is always a casualty of war. International attention currently focused on Kosovo also raises questions about the environmental health consequences of other recent wars including the Gulf War in 1991.

*"Mesas and mountains, rivers and trees, winds and rains are as sensitive to the actions and thoughts of humans as we are to their forces. They take into themselves what we give off and give it out again."*

Edith Warner, *The House at Otowi Bridge*  
by Peggy Pond Church

The research findings of the World Health Organization and the United Nations Environment Programme (UNEP) on depleted uranium, or DU, in Kosovo provide some disturbing insights. WHO's research suggests that the Gulf War Syndrome affecting military personnel might be related to the effects of exposure to depleted uranium. WHO concludes that, "Chemical toxicity would be expected to be the main health concern rather than the radiation exposure." Investigations from both agencies clearly indicate that the greatest toxicity burden falls on young children who could be more at risk of DU exposure "when returning to normal activities within a war zone through contaminated food and water, since typical hand-to-mouth activity of inquisitive play could lead to high DU ingestion from contaminated soil," as stated by WHO. Both reports agree on the lack of sufficient data regarding the full impact of DU both in the short and long term, but the research suggests that water and soil over time could remain toxic providing long term health risks to humans.

A particularly troubling finding, on the 15th Anniversary of the Chernobyl Nuclear Tragedy, is UNEP's discovery of trace amounts of plutonium in the form of the isotope Pu-239/240 in some samples of DU. This means that nuclear reactors provided the source for the plutonium, and once again calls into question the integrity of nuclear power as an energy source.

UNEP's report on the environmental impact of depleted uranium (DU) ammunition used during the 1999 Kosovo war describes specific situations where the health risks from environmental contamination could be significant and identifies the likelihood for "scientific uncertainties relating to the longer-term behavior of DU in the environment." UNEP calls for precautionary action that significantly includes "providing information to local populations on precautions to be taken if DU is found."

The World Health Organization's Fact Sheet on DU contains relevant information about the toxicity potential of depleted uranium which we reprint in part here.

### Uranium and Depleted Uranium

Uranium is a naturally occurring element used, among other applications, in the generation of nuclear power. Naturally occurring uranium has three principal radioactive isotopes, namely U-238, U-235 and U-234. Depleted uranium (DU) is a by-product of the process of uranium enrichment (increasing U-235, the fissionable isotope concentration) in the nuclear power industry in which nearly all the radioactive isotope U-234 and about two thirds of the U-235 are removed. Thus, DU is almost entirely U-238 and is about 60% as radioactive as natural uranium. DU can also contain traces of other radioactive isotopes introduced during processing [Plutonium was found by UNEP]. Chemically, physically and toxicologically, DU behaves in the same way as the metallic form of natural uranium. Fine particles of both metals ignite easily, producing oxides.

### Uses of Depleted Uranium

DU weapons are regarded as conventional weapons and are used freely by armed forces.

### Concerns Raised by the Use of Depleted Uranium

DU is released from fired weapons in the form of small particles or dust that may be inhaled, ingested or remain in the environment. DU weapons may affect the health of the populations living in the conflict areas in the Gulf and the Balkans. There is speculation that the "Gulf War Syndrome" is linked to DU exposure, but no causal relationship has yet been established. DU was released into the environment by planes that crashed (e.g. Amsterdam, Netherlands in 1992; Stansted, United Kingdom in January 2000); this has raised the concern of governments and non-governmental organizations.

### Depleted Uranium and Human Health

The effects of DU on human health are complex, due to its chemical form that enters the body, and may be caused by both chemical and radiological mechanisms. Information on health and environmental effects of uranium is limited. However, since uranium and DU are essentially the same, except for the composition of their radioactive components, scientific studies on natural uranium are applicable to DU. For the radiation effects of DU, the picture is further complicated since most data refer to the health effects of natural and enriched uranium. Health effects depend on: the route and magnitude of exposure (ingestion, inhalation, contact or in wounds) and the characteristics of DU (particle size and solubility). The likelihood of detection of possible effects may depend on the setting (military, civil, occupational).

### Health Risks

Chemical toxicity: Uranium causes kidney damage in experimental animals, and some studies indicate that long-term exposure may result in damage to kidney function in humans. Radiological toxicity: DU decays mainly through emission of alpha particles that do not penetrate the external skin layers but may affect internal body cells. Exposure to alpha and beta radiation from inhaled insoluble DU particles may therefore lead to lung tissue damage and increase

the probability of lung cancer. Similarly absorption into the blood and retention in other organs, notably the skeleton, is assumed to carry an additional risk of cancer in these organs, depending on the level of radiation exposure. However, at low radiation exposure levels, the risk of cancer is thought to be very low.

**DU in the Environment**

In arid regions, most DU remains on the surface as dust. It is dispersed into soil more easily in areas of higher rainfall. Cultivation of contaminated soil and use of contaminated water and food may pose health risks, but these are expected to be limited. Chemical toxicity would be expected to be the main health concern rather than the radiation exposure. Young children rather than adults could be more at risk of DU exposure when returning to normal activities within a war zone through contaminated food and water, since typical hand-to-mouth activity of children could lead to high DU ingestion from contaminated soil.

**SOURCES:** WHO Fact Sheet No. 257, January 2001, <http://www.who.int>; UNEP Press Release, Geneva, 13 March 2001. The report is available at <http://www.unep.ch/balkans>



**DID YOU KNOW?**

Overall energy use is closely linked to population growth which will reach 6.1 billion in mid-2000 and is currently growing at an annual rate of 1.2 percent, or 77 million people a year. Worldwide energy consumption will grow by 59 percent over the next 20 years, according to the U.S. Department of Energy (DOE). Carbon dioxide emission, linked to global climate change are expected to double and will grow from 5.8 billion metric tons carbon equivalent in 1999 to 7.8 billion metric tons in 2010 and 9.8 billion metric tons by 2020. Developing countries account for 81 percent of the projected increment in carbon dioxide emissions between 1990 and 2010. Fully half of the projected growth in energy demand will occur in tandem with strong economic growth in China, India, South Korea and in Central and South America, according to the report.

Natural gas, the fastest growing component of primary world energy consumption, is projected to nearly double in 20 years. Worldwide consumption of electricity generated from nuclear power is expected to increase from 2,596 billion kilo-

**Energy-Related Options to Address Social Issues**

Social challenge	Energy linkages and interventions
Alleviating poverty in developing countries	<ul style="list-style-type: none"> <li>Improve health and increase productivity by providing universal access to adequate energy services—particularly for cooking, lighting, and transport—through affordable, high-quality, safe, and environmentally acceptable energy carriers and end-use devices.</li> <li>Make commercial energy available to increase income-generating opportunities.</li> </ul>
Increasing opportunities for women	<ul style="list-style-type: none"> <li>Encourage the use of improved stoves and liquid or gaseous fuels to reduce indoor air pollution and improve women's health.</li> <li>Support the use of affordable commercial energy to minimize arduous and time-consuming physical labor at home and at work.</li> <li>Use women's managerial and entrepreneurial skills to develop, run, and profit from decentralized energy systems.</li> </ul>
Speeding the demographic transition (to low mortality and low fertility)	<ul style="list-style-type: none"> <li>Reduce child mortality by introducing cleaner fuels and cooking devices and providing safe, potable water.</li> <li>Use energy initiatives to shift the relative benefits and costs of fertility—for example, adequate energy services can reduce the need for children's physical labor for household chores.</li> <li>Influence attitudes about family size and opportunities for women through communications made accessible through modern energy carriers.</li> </ul>
Mitigating the problems associated with rapid urbanization	<ul style="list-style-type: none"> <li>Reduce the 'push' factor in rural-urban migration by improving the energy services in rural areas.</li> <li>Exploit the advantages of high-density settlements through land planning.</li> <li>Provide universal access to affordable multi-modal transport services and public transportation.</li> <li>Take advantage of new technologies to avoid energy-intensive, environmentally unsound development paths.</li> </ul>

**SOURCE:** World Energy Assessment, UNDP 2000, p. 9

**Annual Solar Energy Potential (Exajoules)**

Region	Minimum	Maximum
North America	181.1	7,410
Latin American and Caribbean	112.6	3,385
Western Europe	25.1	914
Central and Eastern Europe	4.5	154
Former Soviet Union	199.3	8,655
Middle East and North Africa	412.4	11,060
Sub-Saharan Africa	371.9	9,528
Pacific Asia	41.0	994
South Asia	38.8	1,339
Centrally planned Asia	115.5	4,135
Pacific OECD	72.6	2,263
<b>Total</b>	<b>1,575.0</b>	<b>49,837</b>
<b>Ratio to current primary energy consumption (402 exajoules)</b>	<b>3.9</b>	<b>124</b>
<b>Ratio to projected primary energy consumption in 2050 (590-1,050 exajoules)</b>	<b>2.7-1.5</b>	<b>84-47</b>
<b>Ratios to the projected primary energy consumption in 2100 (880-1,900 exajoules)</b>	<b>1.8-0.8</b>	<b>57-26</b>

Note: The minimum and maximum reflect different assumptions on annual clear sky irradiance, annual average sky clearance, and available land area.

**SOURCE:** World Energy Assessment, UNDP 2000, p. 163



**The Moken make use of renewable resources such as fast-growing bamboo**

**SOURCE:** UNESCO Sources, July-August 2000

watt hours (kWh) in 1999 to 2,636 billion kWh in 2015 before declining to 2,582 billion at the end of the Forecast period. Most of the growth in nuclear capacity is expected in the developing world, particularly Asia. Some older reactors are expected to be retired in the industrialized world and in Eastern Europe and the Russian Federation, and few new reactors are planned to replace them. Exceptions include France and Japan, where several new reactors are expected to begin operating in the next decade. Renewable energy use is expected to increase by 53 percent between 1999 to 2020, but its current 9 percent share of total energy consumption is projected to drop to eight percent by 2020.

**SOURCES:** Environment News Service: March 29, 2001, <http://www.eia.doe.gov>

■ Recent research on the environmental traditions of indigenous cultures highlights the loss of human diversity among cultures around the world. A sampling follows of the information about indigenous environmental practices compiled by researchers for the United Nations Environment Programme.

- Native farmers in parts of West and East Africa, such as the Fulbe of Benin and tribes in Tanzania, find and encourage termite mounds to boost the fertility and moisture content of the soil.

- The Turkana tribe of Kenya plan crop planting around an intimate knowledge of the behavior of frogs and birds, such as the ground hornbill, green wood hoopoe, spotted eagle owl and nightjar, which are revered as "prophets of rain."

- Native farmers of the Andean mountains built terraces, canals and raised fields, known as waru-waru at nearly 4,000 meters up in the Andes for over 3,000 years. The system has allowed the native peoples there to produce crops like potatoes and quinoa in the face of floods, droughts and severe frosts. The canals, filled with water, allow moisture to percolate through to the fields. During floods they help drain off the excess water. This farming system also helps the farmers cope with temperature extremes. Water in the canals absorbs sunlight during the day, radiating it back into the raised fields

at night to protect the crops from frost. The fields can be several degrees warmer at night than the surrounding area. Meanwhile, the system maintains soil fertility. Organic matter, silt and algae build up in the canals and then dug out as a fertilizer. The waru waru system is not only sustainable and environmentally friendly but also leads to higher yields. Studies indicate that potato yields, grown in this traditional farming system, are about 10 tons a hectare versus the regional average of one to four tons.

- The Dai of Southwest China and Holy Hills live in the Xishuangbanna region of Yunnan Province. They have a long tradition of conserving wildlife as part of their religious beliefs in gods residing in forested areas known as Holy Hills or Nong. It is estimated that 400 of these virgin forests or Holy Hill sites, representing 50,000 hectares or up to 2.5 per cent of the land area where they live, are conserved by these people and have become islands of bio-diversity. Near the village of Man-yuang-kwang the Holy Hill, in which it is forbidden to cut down trees or build houses, studies have found the site holds 311 different plant species, including about 100 species of medicinal plants.

- The collective memory of the Tlingit people of Northwest North America is embedded in basket weaving. The harvesting of the materials to make the baskets requires intimate and ancient knowledge of the natural world and sustainable methods to remove the bark and conserve the cedar trees which are used. Strips, usually just one per tree, are taken from a tree on the steep side of the mountain where, because the tree is growing towards the light, there are no branches. A long strip of bark can be peeled up to the length of the tree, leaving the tree to heal and grow.

**SOURCE:** UNEP Press Release, NAIROBI, 8 February 2001—Research Report is edited by Professor Darrell Addison Posey, Federal Univ. of Maranhao, Sao Luis, Brazil, and Oxford Univ. Centre for the Environment, Ethics and Society.

■ Around 30 percent of pesticides marketed in developing countries with an estimated market value of US \$900 million annually do not meet internationally accepted quality standards. They are posing a serious threat to human health and the environment as they frequently contain hazardous substances and impurities that have already been banned or severely restricted elsewhere. Such pesticides often contribute to the accumulation of obsolete pesticide stocks in developing countries where they are mainly used for agriculture, and for public health, such as insecticides for controlling insects spreading malaria. UN Food and Agriculture Organization (FAO) and World Health Organization (WHO) said that the problem of poor-quality pesticides is particularly widespread in sub-Saharan Africa, where quality control is generally weak. The UN agencies urged governments, international and regional organizations to adopt the world-wide accepted FAO/WHO pesticide specifications to ensure the production and trade of good quality products. Countries should make these voluntary standards legally binding. The FAO/WHO standards are especially important for developing countries that lack the infrastructure for proper evaluation of pesticide products. Pesticide industries, including producers of generic pesticides, should submit their products for quality assessment to FAO/WHO. For more information, please contact FAO Media officer Erwin Northoff, tel: 0039-06-5705-3105 e-mail: [erwin.northoff@fao.org](mailto:erwin.northoff@fao.org)

**SOURCE:** <http://www.fao.org/AG/AGP/AGPP/Pesticid/>



**GOOD NEWS!**

■ The popularity of wind energy continues to grow in Europe and the US. Germany is on target to meet a 22,000 megawatt (MW), or one third, share of Europe's wind power production goal of 60,000 MW by 2010, according to the vice president of the European Wind Energy Association. In the coal region southeast of Pittsburgh, atop a mountain stripped bare by decades of

mining, eight giant wind turbines work around the clock. Erected last spring, the \$10 million project is Pennsylvania's first large-scale venture in using the power of the wind to produce electricity. The world's largest wind farm will be built this year on the Oregon-Washington border, with 450 huge windmills generating enough electricity to power 70,000 homes in the West. Oregon-based PacifiCorp has agreed to buy all of the power from the wind farm for the next 25 years.

**Sources:** Reuters, January 23, 2001; Knight-Ridder

■ A new breed of energy entrepreneurs is set to deliver clean, modern and affordable energy to poverty-stricken rural areas of Africa and South America with support by the United Nations Foundation (UNF) which will invest \$4.2 million in the United Nations Environment Programme (UNEP) African Rural Energy Enterprise Development initiative (AREED). A similar program in Brazil is planned to begin shortly afterward. The goal of AREED is to develop entrepreneurs in the African countries of Ghana, Botswana, Mali, Senegal and Zambia using commercial expertise to start up viable businesses in energy. More than 30 enterprises are now in development to deliver affordable energy services based on clean, renewable energy from solar, wind, bio-mass, hydro and geothermal technologies. In Mali, for example, the burning of fuel-wood severely depletes local forests and is unsustainable, but AREED is working with a local entrepreneur to manufacture bio-mass briquettes from crop wastes such as risk husks and peanut shells.

**Source:** UNEP News Release, Paris/Nairobi, 20 March 2001/42

■ A global study on the health and environmental impacts of mercury is to be undertaken by the United Nations Environment Programme (UNEP). The study, which will also undertake an assessment of the cost-effectiveness of mercury anti-pollution measures and technologies, was one of several important decisions adopted at the close of the 21st session of UNEP's Governing Council. Among several important decisions on UNEP's chemicals agenda was a new initiative to tackle the issue of lead in petrol. UNEP launched UNEP.net, a pioneering "one stop" web-based service that is set to change the way knowledge about environment and

degradation is disseminated to the world. Official documentation from the Governing Council can be found on UNEP's web site at: [www.unep.org/GC\\_21st/](http://www.unep.org/GC_21st/).

**Source:** UNEP News Release, Nairobi, 9 February 2001/22

■ Monitoring the group of toxic chemicals known dioxins in food, livestock feeds and other materials should be less expensive, thanks to new technologies developed by scientists with the Agricultural Research Service. The new ARS technologies can detect dioxins in concentrations as low as 0.1 parts per trillion in fat samples. In a US Department of Agriculture (USDA) fact-finding mission to investigate the extent of dioxin contamination in livestock from all sources, a team of ARS scientists researched dioxins in beef produced in 13 states, including Hawaii. The scientists found that most of the samples were "clean," with some exceptions in the kidney fat of some individual carcasses. The beef samples that had high dioxin levels were found to have come from animals raised in barns or pens containing posts that had been treated with dioxin-containing pentachlorophenol (penta) to prevent rotting. According to EPA regulations, wood preservatives used for fence posts or feeding troughs in barns can no longer contain penta.

**Source:** Agricultural Research Service, US Dept. of Agriculture, January 23, 2001, [www.ars.usda.gov/is/AR/archive/jan01/dioxin0101.htm](http://www.ars.usda.gov/is/AR/archive/jan01/dioxin0101.htm)

■ The bottle-nosed dolphin (*Tursiops truncatus*), popularly known as "Flipper", was commonly found in the Mediterranean during the first half of the 20th century. Since the 1940s the population has been in decline. Finally, after 10 years of pressure from conservation organizations such as World Wildlife Fund, the governments of France, Italy and Monaco agreed to create a whale sanctuary in the Ligurian Sea.

**Source:** Conservation News Service, Zalewski. E-mail: [sally.zalewski@libertysurf.fr](mailto:sally.zalewski@libertysurf.fr)



**Electric cars plug in, take off. Curious-looking contenders don't exactly roar as electric-vehicle rally begins in Puerto Viejo, Costa Rica; unprecedented event will tour the whole country.**

**SOURCE:** The Tico Times, Costa Rica, 3/30/01

■ More than 110 countries have adopted a new Plan of Action against illegal, unregulated and unreported fishing. The voluntary agreement aims at preventing, deterring and eliminating illegal, unregulated and unreported (IUU) fishing, FAO said. While IUU fishing is found within and outside the exclusive economic zone (200 miles from the coast), it is not confined to high seas fisheries, FAO said. In some important fisheries, IUU fishing accounts for up to 30 percent of total catches. Of particular concern are fishing vessels flying "flags of convenience" granted by countries that allow fishing vessels to operate under their flag without controlling their fishing activities. The Plan of Action calls for better cooperation, information and data sharing between countries as well as strict monitoring, control and surveillance of all fishing activities. According to FAO, about 47 to 50 percent of major marine fish stocks are currently fully exploited, with no room expected for further expansion. Another 15 to 18 percent are overexploited, whereas 10 percent of stocks have been depleted or are recovering from depletion. An estimated 25 to 27 percent of stocks are under-exploited or moderately exploited and represent the main potential source for expansion of total capture fisheries. For more information, contact the FAO Media-Office: 39 06 57053625.

**SOURCE:** Press Release Rome, 2 March 2001, [www.fao.org](http://www.fao.org)

■ UNDP and Egypt have signed an agreement for a major initiative to strengthen the country's information and communication technology (ICT) sector, ranging from modernizing telecommunications to promoting e-business. The project will provide support to the communications sector through preparation of a strategic plan to reinforce modernization of Egypt's national communications network. It will also set up a policy unit and take other steps to strengthen the capacity of the telecommunications regulatory authority.

UNDP is also assisting Egypt in strengthening the capacity of the Government, legal system and civil society in human rights by providing educational materials to officials and opinion leaders to enhance public awareness of human rights issues. It will also provide educational materials to officials and opinion leaders to enhance public awareness of human rights issues. Ambassador Soliman Awad, Assistant Foreign Minister for Multilateral Affairs joined Mr. Cain, UNDP Representative at the signing ceremony. For more information contact Omar Gharzeddineof, UNDP Communications office, [omar.gharzeddine@undp.org](mailto:omar.gharzeddine@undp.org)

**SOURCE:** [www.undp.org](http://www.undp.org) January 2001.

■ Cisco Systems, a leading supplier of hardware for the Internet and United Nations Development Programme (UNDP) to help narrow the digital divide, have launched an Internet training programme in Cotonou, Benin, for 18 Internet administrators from eight francophone countries in Africa and are establishing a new Internet training centre in Burkina Faso. The "training of trainers" course is a new step to bring Cisco's Networking Academy Program to half of the world's 48 least developed countries.

In a related development, the Information Technology Centre at the University of Ouagadougou in Burkina Faso has signed an agreement to become another Regional Academy for the Cisco initiative. For more information contact Karim Okanla, UNDP Benin, [karim.okanla@undp.org](mailto:karim.okanla@undp.org) or Theophane Kinda, UNDP Burkina Faso, [theophane.kind@undp.org](mailto:theophane.kind@undp.org)

**SOURCE:** [www.undp.org](http://www.undp.org) January 2001

■ General Motors Corporation, the world's largest auto maker, Exxon Mobile Corporation, the world's largest oil company, and Toyota Motor Corporation have agreed to form an alliance to jointly develop fuel-cell cars, which are expected to be the future of automobiles.

**SOURCE:** *Screaming Media*



**Hypercar, powered by a fuel-cell, zero-emission engine takes oxygen from the air and hydrogen from its tank to create a chemical reaction that produces electricity and water—the only by-product is developed by the Rocky Mountain Institute.**

**SOURCE:** *Economist*, March 10, 2001

■ People seeking health information on the Internet will get a higher standard and faster results under a bold new World Health Organization (WHO) proposal. The initiative aims to cut a direct path through the Internet maze, making it much easier for users to find the accurate and reliable health information they need. WHO has proposed the creation of ".health" to join the small group of Internet top-level domains (TLDs) such as ".com" and ".org" that currently help users locate websites in their chosen field of interest.

At present there are more than 10,000 health sites on the Internet. Users have no easy way of finding their way through them, nor can they be sure about the accuracy or reliability of the information. If the proposal is accepted, WHO, as the sponsoring organization, would have the responsibility to set policy on how the ".health" TLD is distributed and used.

WHO's intention is that ".health" will immediately identify the domain-name holder as adhering to agreed quality and ethical standards, thereby instilling confidence and security in the information provided.

**SOURCE:** <http://www.who.int/>, e-mail: [info@who.int](mailto:info@who.int)



## VOICES

■ *Back To The Future: Working Safely With Hydrocarbons*, a new UNEP video, is a collaborative effort between UNEP, the Government of Germany through GTZ and Greenpeace International to raise awareness and highlight the necessary safety practices in the use of hydrocarbons as refrigerants and insulation foam blowing agents. This 20-minute video aims to help local refrigeration manufacturers in develop-

ing countries to understand and use hydrocarbons as an alternative to CFCs, hydro-chlorofluorocarbons (HCFCs) and hydro-fluorocarbons (HFCs) in domestic and small commercial refrigeration, especially the safety aspects associated with its use. It is available in English, French, Spanish, Chinese, Arabic and Russian. For more information, contact: Mr. Rajendra Shende, Chief, UNEP Energy and OzonAction Unit, Paris, tel: (33-1) 4437-1450, fax: (33-1) 4437-1474, e-mail: [ozonaction@unep.fr](mailto:ozonaction@unep.fr), [www.uneptie.org/ozonaction.html](http://www.uneptie.org/ozonaction.html)

■ Friends of the Earth has launched a new campaign mobilizing mothers of babies and young children to fight for new controls on risky chemicals in household products. Friends of the Earth worked with the UK National Childbirth Trust to produce and distribute the guide. [www.foe.co.uk/safer\\_chemicals/](http://www.foe.co.uk/safer_chemicals/)

■ Students at 19 universities and other institutions around the world are linking up via the Internet to exchange information on promising solutions to urban environmental problems facing the poor. This innovative distance learning course initiated by UNDP and called the Public-Private Partnerships for the Urban Environment (PPPUE) is pioneering new ways for government, the private sector and civil society to join forces to address problems facing the poor in cities on every continent. The course links students, researchers and those working in public policy, with the main goal of helping developing countries build local capacity and expertise on ways that public-private partnerships can address urban environmental problems. For further information contact: Mr. Tomoo Ueda, PPPUE, UNDP (New York), tel: +212-906-6639. Please visit their website at: [www.undp.org/pppue](http://www.undp.org/pppue)

■ A new Internet project entitled "Information and Communication Technologies supporting women's gender equality programmes in Senegal" is planned for launch this year. The project, implemented by ENDA Third-World in partnership with Siggil Jigeen, and supported by the International Development Research Centre, aims to raise public awareness of the need for replacing notions of "marital power" and "paternal power" with ideas of "joint parenting" and "joint responsibility for the family." This will be

done through research, content production, information and communication, training and lobbying—using the many tools offered by the Internet. The project will actively collaborate with African and international information networks which seek to promote the rights of the individual. For additional information contact: Synergy Gender and Development, B.P. 3370, Dakar, Senegal. tel: (221) 8234542; fax: (221) 822 26 95; e-mail: [synfev@enda.sn](mailto:synfev@enda.sn); [www.enda.sn/synfev/synfev.htm](http://www.enda.sn/synfev/synfev.htm) or Siggil Jigeen, B.P. 10157, Dakar, Senegal, tel/fax: (221) 825 00 56; e-mail: [sjigeen@telecomplus.sn](mailto:sjigeen@telecomplus.sn); [www.famafrique.org/sjigeen/sjigeen.htm](http://www.famafrique.org/sjigeen/sjigeen.htm)

■ Tanzania Online is a gateway to information on development issues in Tanzania. Available via the Internet and free of charge to anyone, it is a UNDP/UN Government of Tanzania and Economic and Social Research Foundation (ESRF) initiative to address problems faced by Government officials, policy makers, private sector, civil society, donor community, researchers and academicians accessing information on development issues in Tanzania. Tanzania Online is available at: [www.tzonline.org](http://www.tzonline.org), or for further information contact [tzonline@esrf.or.tz](mailto:tzonline@esrf.or.tz)

■ *Making Waves—Stories of Participatory Communication for Social Change*, by Alfonso Gumucio Dagron published by The Rockefeller Foundation, is a study of the field of participatory communication for social change and how it is evolving. The study reviews 50 illustrations of the power of community decision-making and action in Africa, Latin America and Asia and highlights action that communicates the lives and circumstances of the poor who are making waves by going against cultural norms, rebelling against forces that keep them down and broadcasting tales that were previously unheard. The research is available free of charge. Contact Brian Byrd: [bbyrd@rockfound.org](mailto:bbyrd@rockfound.org)

■ From the UNEP Division of Technology, Industry and Economics web site: *Natural Selection: Evolving Choices for Renewable Energy Technology and Policy* provides an overview of major renewable energy technologies and the policy frameworks as well as some scenarios that can lead to a sustainable energy future. For further information visit: [www.uneptie.org/energy/Publications/naturalselection.htm](http://www.uneptie.org/energy/Publications/naturalselection.htm). The current issue of *Industry and Environment Magazine* is available on the same site at [www.uneptie.org/media/review/ie\\_home.htm](http://www.uneptie.org/media/review/ie_home.htm)

■ [www.worldwaterday.org](http://www.worldwaterday.org). World Health Organization (WHO), is the lead United Nations agency for world water day, March 22. Information on this year's theme will be regularly posted on the site throughout the year. This will include: an explanatory leaflet on World Water Day; an "advocacy guide"; water related disease fact sheets; theme articles linking water and health; case studies covering success stories as well as continuing water and health dilemmas.

■ A new issue of the *World Rainforest Movement Bulletin* No. 42 (January 2001) is devoted to the impacts of dam mega-projects worldwide and the resistance they have generated. Case studies in Africa, Asia, South America and

**VOICES** (continued from page 13)

Central America, as well as information on the recent report of the World Commission on Dams and the coming International Day of Action against Dams is provided. For further information contact: [teresap@wrm.org.uy](mailto:teresap@wrm.org.uy) and visit the web site: [www.wrm.org.uy](http://www.wrm.org.uy)

■ Biotechnology background papers are available from the following web sites which contain synopses of papers on health related topics.

(1) The Supervision of Health and Bio-safety Regulation by World Trade Rules can be found at [www.cid.harvard.edu/cidbiotech/links/regulation-rp](http://www.cid.harvard.edu/cidbiotech/links/regulation-rp). This Article concludes that, while there are legitimate concerns about whether the SPS (Agreement on Sanitary and Phytosanitary Measures) interferes too much in health policy, a comprehensive evaluation of the SPS aimed at seeking major revisions is premature.

(2) Governing the GM Crop Revolution: Policy Choices for Developing Countries, [www.cid.harvard.edu/cidbiotech/links/regulation-rp.htm](http://www.cid.harvard.edu/cidbiotech/links/regulation-rp.htm). A system for classifying policy

choices toward GM crops in the areas of intellectual property rights, food safety, bio-safety, trade, and public research investment is discussed. This is followed by current snapshots and analyses of policies toward GM crops for Brazil, China, India, and Kenya. Of these four countries, only China has officially approved the commercial planting of GM crops, while precautionary bio-safety policies in the three other countries so far have prevailed.

**POINT OF VIEW** (continued from page 16)**The Challenges Ahead**

In every relevant UN major conference and summit, the role of women in development, particularly in promoting sustainable development is recognized. The linkages of sustainable development, women and health are emphasized in every consensus document while comprehensive solutions in addressing financial resources and mechanisms is still lacking. In this regard, a strong political commitment should be coupled with concrete actions to be supported by available and accessible financial resources.

In the annual review of sectoral and cross-cutting issues particularly on the implementation of Agenda 21, we witness a tendency of "ping-pong type" arguments. This means that developed countries' failure to provide assistance as committed in Agenda 21 is always pitted against Southern failure to undertake sufficient "structural reforms". Identifying comprehensive, concrete and doable measures will be able to put a stop to this type of argument.

Comprehensive deliberation on the linkages between financing for sustainable development, women and health is still lacking in all relevant mechanisms and deliberations within the UN system.

**Recommendations**

1. The need for equitable involvement of women in implementing Agenda 21, the Rio Conventions and CSD Decisions (Commission on Sustainable Development) as well as in all relevant mechanisms and processes, has been repeatedly reaffirmed. The role of women particularly in policy-making processes at the local, national and global levels should clearly be defined in concrete programs and put in practice with necessary arrangements and support from the international

community in terms of its financial resources. In this regard, the approach should emphasize how to clearly define and formulate concrete programs for women's empowerment and its concrete mechanisms on financial resources as its most important means of implementation.

2. The linkages between sustainable development and all of its three components, women and health, particularly in addressing financial resources and mechanisms, should clearly be defined in the preparatory processes of the World Summit on Sustainable Development (WSSD) at local, national, sub-regional, regional and global levels. The preparation of financing for development should also take similar approaches in identifying concrete and doable action programs.

3. The women's groups should start to caucus among themselves in identifying concrete areas and measures to be submitted as input in a coherent fashion to the preparatory processes of the WSSD, including the processes of the high-level event on financing for development.

4. In providing its input to the deliberation on financial resources and mechanisms, options should be formulated on areas where women's involvement will provide additional value in ensuring the implementation of all programs at all levels. Wider access to micro-credit and empowerment of women's organizations at all levels could also seriously be considered in this regard.

5. Within the context of the UN system, joint bureau meetings between the bureau of the preparatory committee of the WSSD and the Financing for Development bureau as well as the bureau of the Commission on the Status of Women should be organized so as to ensure coherence in the designing of programs and their implementation.

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**POINT OF VIEW:****Financing Sustainable Development: Women & Health**

By I. Gedengurah Swajaya  
Mission of Indonesia to the United Nations  
Presented at the briefing organized by NGO Committees on  
Health and Communication and Sustainable Development.

Financial resources and mechanisms, one of the most important means for implementing sustainable development, are of fundamental importance to developing countries. Although it was clearly stated in both Agenda 21 and the further implementation of Agenda 21 that the financing of sustainable development will come from each country's public and private sectors, ODA (Official Development Assistance) especially for developing countries, remains the main source of external funding. Substantial new and additional resources are also urgently required.

Eight years after the UN Conference on Environment and Development (UNCED) in Rio, only four countries have fulfilled their commitments to meet the UN target of 0.7 per cent ODA, while for the rest, particularly most of the OECD countries, ODA fell steadily. It was also not fully compensated for by the additional US\$4 billion from the GEF (Global Environment Fund). In this context, the Financing for Development High-Level meeting is expected to address mobilization of financial resources for the full implementation of the outcome of major UN conferences and summits in particular the World Summit on Sustainable Development (WSSD).

The United Nations Special Session on UNCED, (UNGASS 19) emphasized the need to establish clear linkages between health and the environment, one of the three pillars of sustainable development, (the other two are economic and social development), and to address the lack of information on the

impact of environmental pollution on health. In this regard, the Special Session agreed that health and its linkages should fully be integrated into national sustainable development plans and incorporated into projects and programs of development as a component of the environmental assessment (EIA).

The role of women, in this regard, is of crucial importance taking into account the fundamental role that women have

played in determining the prospects of the future generations. The 41st session of the Commission on the Status of Women in its agreed conclusions on women and environment emphasized that the contribution of women to sustain-

able development should be recognized and supported. Therefore, there is a need for a clear gender perspective in the deliberations on sustainable development, particularly in the preparatory processes of the World Summit on Sustainable Development. The mobilization of financial resources in this regard is also fundamental, particularly for developing countries.

The Beijing women's conference and its Platform of Action elaborated a clear link between women, health and environment. Reducing environmental hazards that pose a growing threat to health, especially in poor regions and communities, needs the application of the Precautionary Approach of the Rio Declaration and a call for the inclusion of reporting on women's health risk related to the environment in monitoring the implementation of Agenda 21. Beijing + 5 identified that obstacles in addressing this issue, particularly in developing countries, are mainly due to poverty, lack of development, and most importantly the shortage of financial and human resources.

*"The suppression of women from participation in social, political and economic life hurts the people as a whole, not just women. The emancipation of women is an integral part of social progress, not just a "women's issue."*

Amartya Sen, 1998 Nobel Prize in Economics

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