



Health in the Millennium Development Goals

Goals, targets and indicators related to health

HEALTH TARGETS		HEALTH INDICATORS	
Goal 1: Eradicate extreme poverty and hunger			
Target 1	Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day		
Target 2	Halve, between 1990 and 2015, the proportion of people who suffer from hunger	4.	Prevalence of underweight children under five years of age
		5.	Proportion of population below minimum level of dietary energy consumption
Goal 2: Achieve universal primary education			
Target 3	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling		
Goal 3: Promote gender equality and empower women			
Target 4	Eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels of education no later than 2015		
Goal 4: Reduce child mortality			
Target 5	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	13.	Under-five mortality rate
		14.	Infant mortality rate
		15.	Proportion of one-year-old children immunized against measles
Goal 5: Improve maternal health			
Target 6	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	16.	Maternal mortality ratio
		17.	Proportion of births attended by skilled health personnel
Goal 6: Combat HIV/AIDS, Malaria and other diseases			
Target 7	Have halted by 2015 and begun to reverse the spread of HIV/AIDS	18.	HIV prevalence among pregnant women aged 15-24 years
		19.	Condom use rate of the contraceptive prevalence rate
		20.	Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years
Target 8	Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	21.	Prevalence and death rates associated with malaria
		22.	Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures
		23.	Prevalence and death rates associated with tuberculosis
		24.	Proportion of tuberculosis cases detected and cured under DOTS (Directly Observed Treatment Short-course)
Goal 7: Ensure environmental sustainability			
Target 9	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	29.	Proportion of population using solid fuels
Target 10	Halve by 2015 the proportion of people without sustainable access to safe drinking-water and sanitation	30.	Proportion of population with sustainable access to an improved water source, urban and rural
Target 11	By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers	31.	Proportion of population with access to improved sanitation, urban and rural
Goal 8: Develop a global partnership for development			
Target 12	Develop further an open, rule-based, predictable, non-discriminatory trading and financial system		
Target 13	Address the special needs of the least developed countries		
Target 14	Address the special needs of landlocked countries and small island developing states		
Target 15	Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term		
Target 16	In cooperation with developing countries, develop and implement strategies for decent and productive work for youth		
Target 17	In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries	46.	Proportion of population with access to affordable essential drugs on a sustainable basis
Target 18	In cooperation with the private sector, make available the benefits of new technologies, especially information and communications		



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Available in Arabic, English, Spanish and Ukrainian.

SPECIAL FOCUS:

Coffee

AN AROMATIC CUP OF COFFEE or a smooth rich espresso begins the day for many of us. The popularity of coffee has grown to the point that more than 500 billion cups of coffee are served worldwide each year. Scandinavians consume more coffee per person than any other group, and in Finland, people drink more than four cups of coffee a day on average. Medical studies have shown various conclusions about coffee's beneficial or harmful effects, but the current consensus is that moderate coffee drinking confers positive health benefits including improved mood and the prevention of gallstone and kidney stone formation.

Coffee is the world's second most valuable export commodity by developing countries after petroleum. While much is known about coffee beverages, little attention has been given to the coffee growers and the environmental effects of growing our morning brew.

Growing the Coffee Bean

The coffee tree is a tropical evergreen shrub (genus *Coffea*), and two beans are generally contained in each fruit, which when ripe resembles a red cherry. Most coffee is still harvested by hand, although some larger farms now employ mechanical harvesters.

After harvesting, the next stage is to remove the outer layers of the bean and create a stable, dry, green coffee bean. They can be stored in this state prior to processing to remove the hull, after which they are sorted and graded and ready for export around the world.

Coffee trees are indigenous to Africa, and can still be found growing wild in the hills of Ethiopia. Today coffee is cultivated in some eighty countries in South and Central America, the Caribbean, Asia as well as Africa, generally in areas lying between the Tropics of Cancer and Capricorn. Coffee is a vital source of export for many of the developing countries that grow it. Roughly 20 million families in 50 countries now work directly in the cultivation of coffee; an estimated 11 million hectares of the world's farmland are dedicated to coffee cultivation.

Latin America and the Caribbean:

Brazil: The coffee industry in Brazil was started in the early 1720s with seedlings obtained from French Guiana. Today, Brazil grows approximately 35% of the world's coffee, producing more than a third of the world's supply, and almost three times as much as the second producer, Vietnam. Brazil is the only high-volume producer which is also subject to frost (between the 1st June until 15th August). The most influential factor in world coffee prices is the weather in Brazil. Droughts and frosts portend shortages of coffee and drive up prices. The devastating frost in 1975 was, for example, a boon to other coffee-growing countries.

Colombia: Colombia, the third largest coffee producing country, with its extremely rugged landscape provides the perfect natural environment for the growth of the coffee bean. The terrain is so rugged that it has also made it historically difficult to transport the harvested coffee beans to production and shipment centers. Even today, this is often done by mule or jeep.

Jamaica: The coffee industry on this Caribbean island began in 1725. About 60,000 Jamaican farmers now grow coffee, some producing as little as five pounds of green beans each year. Mountains cover four-fifths of the country, with the Blue Mountains, in the east, reaching a height of 7,400 feet. The coffee is planted on terraces between 1,500 to 5,000 feet above sea level and is often shaded by avocado and banana trees. It is the home of Jamaican Blue Mountain, one of the world's most controversial coffees. Once a superb coffee characterized by a nutty aroma, bright acidity and a unique beef-bullion like flavor, recent overproduction, lack of attention to quality and profiteering have led to a mediocre, over-priced product. Various surveys have shown that 10 times more Jamaica Blue Mountain coffee is sold than is produced.

Other coffee producing countries in this region include: *Costa Rica, Ecuador, Dominican Republic, and Guatemala.*

Africa and the Arabian Peninsula:

Ethiopia: Ethiopia is the birthplace of the Arabica tree, and wild berries are still harvested by tribespeople in its mountains. It is Africa’s top Arabica exporter and leads the continent in domestic consumption. About 12 million Ethiopians make their living from coffee, whose name is said to be a derivation of “Kaffa,” the name of an Ethiopian province.

Kenya: Its reputation as East Africa’s top quality coffee producer is unsurpassed. The coffee is cultivated on small farms. The government-run system rewards growers for better quality and has led to steady improvements in overall production. The main growing region in Kenya extends south of 17,000-foot Mount Kenya to near the capital of Nairobi. The best Kenyan coffee is called Estate Kenya.

Yemen: In ancient times, when coffee was shipped from the famous Yemeni port of Mocha to destinations all over the world, the word ‘Mocha’ became synonymous with Arabian coffee. Arabian Mocha, grown in the northern mountains of Yemen, is one of the oldest and most traditional of the world’s coffees. It is also one of the finest. This coffee has been cultivated and processed in the same way for centuries, grown on mountain terraces and naturally dried.

There are quite a few more coffee producers in this part of the world, including *Cameroon, Congo, Tanzania, Uganda and Madagascar.*

Asia and the Pacific:

Vietnam: Vietnam became the world’s second largest coffee bean producer by growing large quantities of the Robusta coffee bean, a less flavorful more acidic coffee, and has been charged with driving down the price of coffee beans by flooding the commodity market with an inferior product. By overproducing coffee, the small country put its farmers at risk. Vietnam’s coffee production goal is to limit its overall coffee production to 70 percent Robusta beans, 30 percent Arabica beans, the more desirable bean, and to produce an overall amount of 600,000 tons down from 900,000 in 2000/01.

India: British colonial rulers developed coffee into a

<p>The top 10 coffee-producing nations:</p> <ul style="list-style-type: none"> Brazil Vietnam Colombia Indonesia India Mexico Ethiopia Guatemala Ivory Coast Uganda 		<p>The top 10 coffee-importing countries:</p> <ul style="list-style-type: none"> United States Germany Japan France Italy Spain Canada United Kingdom Poland Netherlands
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commercial crop that remained valuable until 1870 when Coffee Leaf Rust devastated virtually all the country’s plantings. In 1920, Arabica was reintroduced and now accounts for about 50% of India’s total crop. India is the second biggest producer in Asia and is responsible for 25% of Asian coffee production. India’s coffee grows between 2,900 and 5,900 feet above sea level, usually on terraces in the mountainous regions.

Indonesia comprises 13,000 Pacific islands, of which 6,000 are inhabited. It is the world’s third largest producer of coffee. Even though they account for a small percentage of total production, Arabica coffees from this region are considered to be some of the best in the world. The Dutch first brought Arabica to their colony in Java, in what was then known as the Netherlands Indies, in the mid 18th century. Cultivation proved so successful that “Java” became a synonym for all coffee.

Hawaii: Coffee was introduced to Hawaii over 170 years ago. Hawaii boasts a thriving coffee industry, that’s mostly geared towards visitors and gourmets. The Kona area of Hawaii has 525 farms yielding 1,800 acres of coffee. Kona coffee, marketed as a gourmet item, produces an estimated \$10 million a year for farmers.

Other growers in this area of this area are *Sumatra and New Guinea.*

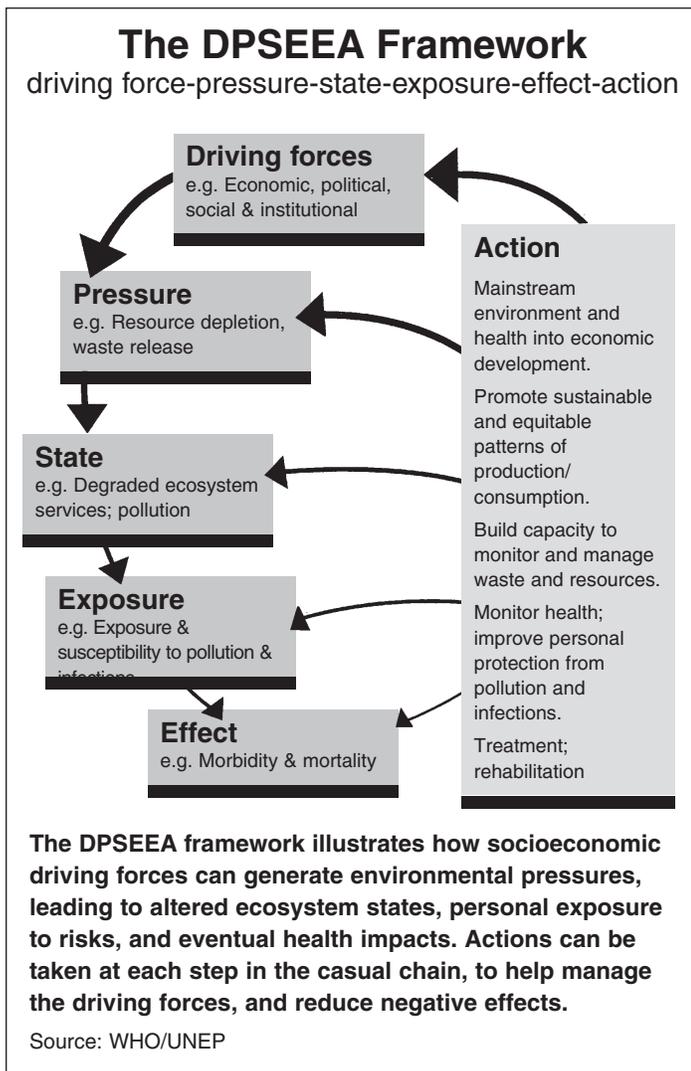
COFFEE FARMING PROBLEMS:

Coffee prices and poverty:

Today, world prices for coffee have fallen to their lowest-ever level in real terms. Nevertheless, transnational companies and ‘designer coffee’ retailers are posting record profits as the price of their main raw material slumps. Corporate gain is consigning some of the world’s poorest and most vulnerable people to

“What has happened to the price of coffee is a disaster. Years back, when coffee prices were good, we could afford to send our children to school.”

SMALL COFFEE FARMER
IN URU DISTRICT OF TANZANIA



These child workers are not officially employed and, therefore, not subject to labor protections. Most coffee workers, like many agricultural workers around the world, are not guaranteed their basic labor rights including the right to organize. The rural nature of farm work makes them especially vulnerable to threats and coercion, as plantation owners can take advantage of their control over the workforce to keep them from organizing into unions and to demand their rights.

Health and Environmental Aspects:

Sun Grown Coffee: Over the past 30 years, traditional coffee farms have given way to so-called “technified” coffee plantations, where the surrounding habitat is completely cleared and only coffee is planted. Rather than allowing nearby trees to naturally fix nitrogen in the soil and provide fertilizer in the form of leaf-litter, synthetic fertilizers are applied. Instead of allowing birds and insects to eat pests, synthetic pesticides, often ones banned in the US, are sprayed. As a result of the chemical input, the sun-grown coffee does produce a quicker, larger yield. Yet, the gains are not what they might appear. Chemicals pollute the surrounding groundwater and poison the workers. Soil erosion increases. The low-quality, mass-produced beans depress the market price, driving traditional farmers out of business. As a result, the shaded plantations are disappearing, and with it, natural habitats. Migratory birds wintering in Central and South America have been particularly hard hit. In addition, traces of the chemicals can be found in the final coffee products that human eventually consume.

A recent World Resources Institute (WRI) report documented extensive human exposure to pesticides in Latin America and elsewhere in the developing world. For example, studies of farm workers and their families in Nicaragua have revealed significant decreases in the activity of cholinesterase, an enzyme vital for normal neuro-muscular functioning. The WRI report notes

...many coffee workers bring their children to help them in the fields in order to pick the daily quota.

that “inadequate safety and hygiene practices are the norm” in developing country pesticide use. The highly toxic insecticide, endosulfan, has contributed to hundreds of human poisonings and sev-

eral deaths throughout the 1990s. Even though the Colombian health ministry took steps to ban endosulfan use in January 1995, concerns continue to be raised that this move has not been implemented fully. Increased nitrogen fertilizer applications have gone hand and hand with the widespread removal of shade cover from Central American coffee plantations. In

extreme poverty and thus to poor health. Laborers involved in coffee production have been devastated by the collapse in international prices.

Many small coffee farmers receive prices for their harvest that can be less than the costs of production, forcing them into a cycle of poverty and debt. They are often forced to sell to middlemen who pay them half the market prices. Conditions for coffee workers on large plantations vary widely, but most are paid the equivalent to sweatshop wages and toil under abysmal working conditions. In Guatemala for example, coffee pickers have to pick a 100-pound quota in order to get the minimum wage of less than \$3 per day. A recent study of plantations in Guatemala showed that over half of all coffee pickers don't receive the minimum wage. Because of this situation, many coffee workers bring their children to help them in the fields in order to pick the daily quota.

high concentrations, nitrates can cause infant methemoglobinemia ("blue-baby syndrome"), a potentially fatal condition that impedes oxygen transport in infants' bloodstream. Other human health concerns surrounding nitrate contamination of groundwater include suspected links between nitrates and certain cancers, birth defects, hypertension, and developmental problems in children. It is interesting to note that one of the main contributors to the use of chemical pesticides and fertilizers in Latin America is USAID, which has provided approximately \$80 million to abet the efforts. Chemicals, which are banned in the United States, are sold by the tons to Latin American producers for sun-grown coffee crops.

Working conditions on these plantations are harsh as many migrant farm workers sleep in temporary shelters with rows of bunk beds. Many times they cook, wash and bathe from the same water source. The study of coffee plantations in Guatemala revealed that only 13% of coffee workers have completed their primary education. Most were not provided with legally-mandated adequate health care.

Shade Grown Coffee: There are more ecological ways to grow coffee. Shade-grown coffee is a term used to describe coffee that is grown under some level of tree cover. This tree cover can be natural forest canopy or a more managed system, where farmers plant shade trees. Coffee evolved as an under-story plant in tropical forests. For hundreds of years, coffee was grown only under shade because the coffee plants could not tolerate direct sunlight. It was only recently that farmers, attempting to increase production, began growing coffee that—with heavy inputs of chemicals and pesticides—can survive in full sun. There are many environmental benefits to purchasing coffee that is shade-grown, including the protection of important wildlife habitat. In addition, there are important social benefits to buying coffee that is fair-trade certified.

As habitats around the world are diminished, migratory birds and other wildlife have found sanctuary in shade-coffee farms. Studies suggest that shade-coffee farms support nearly as many species of birds and small wildlife as undisturbed forest. Many studies have examined the important link between coffee and conservation, and the conclusions are unanimous: traditional shaded farms host high levels of biodiversity, but the new sun-coffee farms are disasters for wildlife. Shade-grown coffee farms provide a wintering habitat for many species of migrating birds found in the United States. These include orioles, warblers, tanagers,

flycatchers, thrushes and vireos. Shade-grown coffee plants are also an important haven for resident bird species such as parrots, toucans, hummingbirds, parakeets and wood-creepers. In the 1990s, biologists working in Mexico discovered that traditionally shade-managed coffee and cacao plantations supported at least 180 species of birds, an amount significantly greater than bird numbers found on any other agricultural land and exceeded only by undisturbed forest. The researchers found 94 to 97 percent fewer bird species in sun-coffee than in shaded coffee farms. Birds are not the only wildlife that benefit from shade coffee. Studies have also shown that shade coffee farms support a richer diversity of small mammals such as margays, ocelots, foxes, ringtails and bats than areas without shade. Finally, by closely mimicking a natural forest system, shade-coffee supports a great diversity of reptiles, insects and native plants.

There are also other environmental and social benefits to purchasing this coffee. Coffee grown under the shade not only preserves wildlife and plant habitats but also decreases soil erosion and protects watersheds. This not only benefits the coffee drinker but helps protect soil and water quality as well as the health of communities where the coffee is grown. Instead of chemicals, farmers rely on shade trees to fixate nitrogen in the soil and leaf litter to create naturally rich and fertile topsoil.

The U.S. has two separate shade certification systems intended to ensure that Latin American shade-grown coffee is produced under a set of scientific guidelines. One is the Eco-OK program developed by the Rainforest Alliance and a network of Latin America environmental organizations, and the other is the

Chemicals pollute the surrounding groundwater and poison the workers. Self erosion increases.



Shade-grown coffee

Source: *Environmental Defense*, Nov./Dec. 2004



IFAD Photo by Nancy McGirr
Guatemala-Zacapa-Chiquimula Smallholders' Rural Development Project

Misrael Recinos showing visitors coffee plants in Tzamarate. During harvest times many children miss school in order to help out.

Source: www.ifad.org/photo/region

Smithsonian Migratory Bird Center (SMBC) criteria. Both systems' standards require a minimum of 40 percent shade coverage, as well as specified tree heights and numbers of non-deciduous native tree species.

Eco-OK is a stand-alone certification that covers many aspects of farming. It requires a minimum of 12 species of native trees and at least 70 trees per hectare (one hectare equals 2.47 acres). It also includes regulations regarding agrochemical use, water resource, soil and waste management, hunting, working conditions, and community relations. Within the next year, Eco-OK auditors will begin to certify for organic and fair-trade criteria as well.

SMBC guidelines focus exclusively on shade. In September 2000, SMBC began a series of workshops to standardize the definition of shade and to align itself with organic certifiers so that a single technician can inspect for shade and organic standards in one visit. Currently, all SMBC-certified farms must also have organic certification. Organic coffee is coffee that is grown without synthetic chemical inputs. Fair-Trade certified coffee is coffee grown on small farms, usually organically and shade-grown. TransFair, the certifying organization, pays a higher price for the coffee, an obvious benefit to the farmer. TransFair then ships the coffee directly to roasters to avoid exploitative middlemen, thus keeping down the price to consumers.

Challenges for shade grown coffee: There are four broad

elements of shade certification that the industry agrees upon: (1) Certification should not increase the financial burden on farmers. (2) Producers who go through the certification process should get a premium price. (3) Certification criteria should be developed with input from farmers. (4) Certification should be based on valid scientific data to ensure that shade increase biodiversity.

Because of the lack of coordination surrounding shade coffee, most of these points have not been implemented, and they are actually the source of many farmers' complaints about shade certification. Importers agree that shade certification doesn't often bring farmers premium prices, but it may help their coffee sell more quickly. All other factors being equal, roasters are more likely to purchase certified-shade coffee over an equivalent uncertified coffee.

Outlook:

In order to gain wider appeal, coffee grown sustainably, with the coffee workers' health in mind, needs a unified front to (1) champion a definition of shade coffee that supports biodiversity and is farmer-friendly and to (2) coordinate compliance and education around that definition. This is hardly a quick fix, but it's the only way that shade will gain more respect and popularity. In May 2001, five non-profit organizations that work on coffee conservation issues (Conservation International, Consumer's Choice

One of the main contributors to the use of chemical pesticides and fertilizers in Latin America is USAID... Chemicals, which are banned in the United States, are sold by the tons to Latin American producers for sun-grown coffee crops.

Council, Rainforest Alliance, Smithsonian Migratory Bird Center, and the Summit Foundation) took a step toward creating a unified front by releasing a document entitled "Conservation Principles for Coffee Production." The principles were designed to provide common ground for conservation groups to work with other environmental movements and coffee businesses. They can also help importers and roasters develop sourcing guidelines and assist banks and foundations in deciding which coffee development projects to fund and how to evaluate them.

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Arsenic Poisoning— The New Epidemic

AN ESTIMATED 50-70 million people living in Bangladesh have fallen victim to this invisible poison, entering their bodies via the very thing that keeps them alive—their water. The World Health Organization (WHO) calls the arsenic poisoning in Bangladesh the largest mass poisoning of a population in history, at a scale beyond that of the accidents in Bhopal and Chernobyl.

Bangladesh, a country with an area only the size of Wisconsin, has a population of approximately 130 million, making it one of the most densely populated nations in the world. The climate of the country is tropical in nature, with more than two thousand millimeters of rainfall each year. It is ironic, however, in a country, which remains under water every year for two to three months, clean water has been difficult to come by. For more than three decades, the people in this country fought against diarrheal diseases from drinking surface water contaminated with bacteria. To

provide a safer source of drinking water, beginning in the 1970s, the Bangladesh government and international aid organizations collaborated to dig millions of shallow wells, called tubewells, throughout the country. By the early 1990s, 95% of Bangladesh's population had access to what they believed to be "safe" water for their drinking and cooking, nearly all of it through the country's more than 10 million tubewells. This approach appeared to be quite successful as infant mortality from bacterial diseases plummeted. However, nobody thought to check the water for arsenic.

Around 30% of Bangladesh's tubewells today are known to contain more than 50 ppb of arsenic in the water, the standard for safe drinking water in Bangladesh. 5-10% of the tubewells contain more than six times this amount, potentially exposing millions to an arsenic level that is much greater than both the Bangladesh standard and the WHO recommended

Arsenic Groundwater Contamination

BANGLADESH

Origin of arsenic:

Natural origin, deriving from the geological strata underlying Bangladesh

First identified: 1993**Affected region:** 61 out of 64 districts**Range of****contamination:** Less than 0.25 mg/L to more than 1600 mg/L**Population exposed:**

Up to 57 million [people] are drinking water with an arsenic concentration greater than the WHO guideline value, and up to 35 million [use] drinking water with concentrations in excess of the Bangladesh standard

CHINA

Origin of arsenic:

Natural, in reducing environment

First identified

First identified in Xinjiang Province in early 1980s

Affected region

Inner Mongolia Shaanxi and Xinjiang Provinces

Range of**contamination**

90% of the wells tested had arsenic at level higher than 50 mg/L (highest concentration detected was 2400 mg/L)

Population exposed:

600,000 in China and 1.1 million in Inner Mongolia

INDIA

Origin of arsenic:

Geological origin, analogous to the problem in Bangladesh

First identified:

Resultant health effects were first identified in late 1980s

Affected region:

West Bengal (8 out of 17 districts)

Also suspected occurrence in Bihar, Gangetic and Brahmaputra plains

Range of**contamination:** Not available**Population exposed:**

Over 5 million. Estimated 300,000 people are suffering from various stages of arsenicosis

MEXICO

Origin of arsenic

Natural. volcanic sediment type aquifer having oxidizing, neutral to high pH groundwater condition

First identified: Not available**Affected region:**

Lagunera Region of north central Mexico. Affected area expands up to 32,000 sq. km. Northern region is also believed to have arsenic contamination.

Range of
contamination: 1 to 500 mg/L (average 100 mg/L)**Population exposed:** 400,000

THE UNITED STATES

Origin of arsenic:

Natural occurrences in groundwater (in both reducing and oxidizing environments).

There are also areas where arsenic comes from geothermal sources and mining related activities

First identified: Not available**Affected region:** Southwestern states of Nevada, California and Arizona.

Arsenic associated with geothermal sources occurs in certain areas in California, Nevada and Los Angeles.

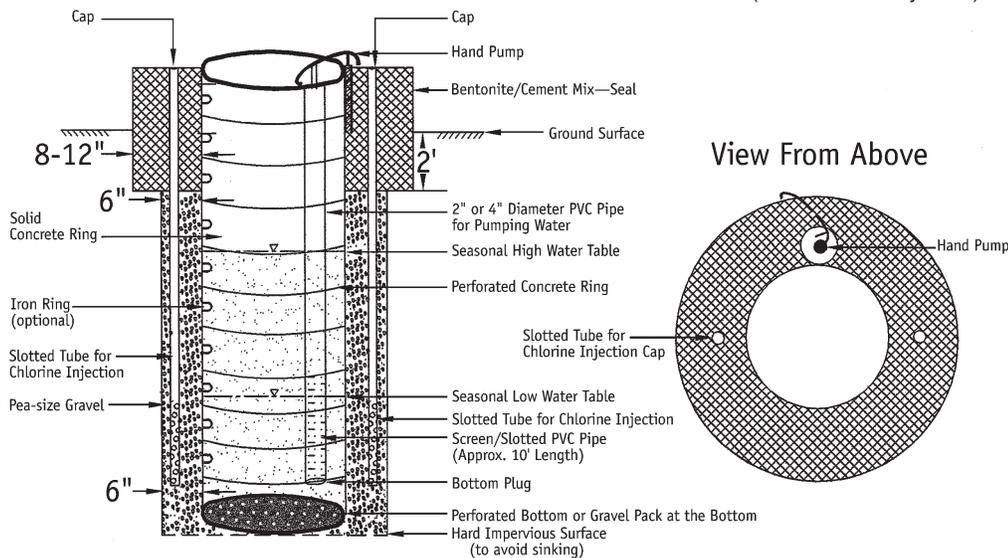
Some areas in Alaska, California, Nevada, and South Dakota have arsenic arising from mining activities.

Range of contamination: Varied**Population exposed:** The Environmental Protection Agency of the United States has estimated that some 13 million are exposed to arsenic in drinking water at 10 mg/L

Construction Design of Dugwells

Design by Timir B. Howe, Ph.D., C.P.G.

(modified January 2002)



Note: Diameter of the well depends on availability of ring size and demand of water supply

the water, such as antimony, a metal known to magnify arsenic toxicity, hasten the toxic process. By 1993, the Bangladesh Department of Public Health Engineering was reporting widespread signs of arsenic poisoning within the population, identifying tubewell water as the source of the arsenic. As minerals such as arsenic leach into the ground water from weathered rocks and soil underground, it makes the contaminant available for consumption. Unfortunately, this complex geochemical process is still underway spreading the toxic chemical throughout the country,

value of 10 ppb. It has long been known that arsenic is acutely toxic, and anyone who drinks arsenic in water at 60 ppm will soon die. Chronic adverse effects of prolonged low level exposure have recently shown up. Although symptoms of chronic poisoning may take 5-15 years to appear, clinical manifestations of arsenic poisoning begin with various forms of skin disease which then proceed by damaging internal organs, ultimately resulting in cancer and death. One of the first symptoms of arsenic poisoning is black spots on the upper chest, back and arms, known as melanosis. Symptoms of keratosis appear when palms of the hands or soles of the feet become hard and lose sensation. In the second stage, white and black spots appear (leucomelanosis), legs swell, and the palms and soles crack and bleed (hyperkeratosis). In addition, neural problems appear in the hands and legs, and the kidneys and liver start to malfunction. In the third stage the sores turn gangrenous, kidney or liver may stop functioning altogether, and eventually, cancers occur, especially of the bladder, kidney, liver and lung. According to the U.S. National Research Council, the combined cancer risk from ingesting more than 50 ppb of arsenic could lead to one in 100 people dying of cancer.

More and more cases of skin lesions started appearing among the Bangladesh people in the early 80s. Despite the 5-15 year lag time there were also reports of young children displaying arsenic related sicknesses. Some scientists suspect that other chemicals present in

as some scientists have found arsenic contaminated water in tubewells measured only a decade ago to be arsenic safe.

Most of the contaminated aquifers are shallow, 10-70 m deep, and lie to the south and southeast of the country. Dr. Timir B. Hore, hydrogeologist, has modified the traditional tubewell design to get arsenic safe ground water from shallow aquifers (within 30 ft depth) without any cross contamination between the contaminated aquifer layer and the arsenic safe layer. Around 40 such modified wells have been constructed in arsenic affected villages of West Bengal, India through an NGO (Project Well USA; www.projectwellusa.org). 95% of the shallow wells have successfully provided arsenic safe drinking water to the villagers. However, fecal coliform bacteria still remains a problem in some of these wells, in many cases due to close proximity to septic systems. To address this issue, villagers are advised to boil their drinking water before use. Scientists in this program are also exploring the possibilities of using disinfectants such as chlorination in these villages to kill the pathogens. This has been difficult considering many villagers, when asked prefer the arsenic contaminated water to the water with the "funny taste."

Aquifers deeper than 200 m are believed to be free of arsenic. Scientists are now looking into the possibilities of digging deeper wells for arsenic free water. Could this be the solution or are people digging themselves

into a deeper hole? Is it really arsenic free 200 m below? Will the shallow contaminated aquifer end up poisoning the deeper pristine layers? Scientists need to be sure before they dig millions of these deep tube-wells. Even if there were a simple solution, it would be difficult to implement change in a poverty stricken country such as Bangladesh where people consider themselves lucky just to have running water, with or without arsenic.

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CHORNOBYL UPDATE:

Not Only Radiation

ONE OF THE MOST POPULAR holiday destinations in the Crimea (Ukraine), Alushta, is on the brink of an environmental disaster. The Crimea is home to over a 100 depots full of dangerous toxic substances. The stores are decaying, and there is no money to decommission the poisonous waste. A danger sign is pinned to the gates of an agricultural warehouse in the village of Izobilne, outside Alushta. The warehouse contains toxic substances that are either banned or are past their use-by date.

There are 156 storage sites like this in the Crimea in addition to two large depots. Experts say that none of these facilities meet the standards of safe storage for poisons, and they pose a serious danger to the environment. Vladimir Serebryakov, section head of the Department for the Protection of the Population of Crimea said, "Many warehouses are run down, storage tanks are worn out, there is danger of chemicals seeping into the ground."

There is just enough money in the Crimean republic to do some emergency work at the two main depots. Toxic substances that have been stored here for decades are now leaking from rusty barrels and pouring out of burst bags. All these toxins interact to create new, unknown substances, and experts do not know how to decommission them. But the most dangerous thing is that these poisons leak into the ground, according to Serebryakov. This is an environmental disaster.

Parts of the Crimea depend on water from artesian wells and, naturally, these toxins find their way underground and into the water supply to the general public. Yevgeniy Levkov, head of the Emergencies

Department of the Ministry for the Agro-Industrial Complex of Crimea, indicated that the toxins, "may cause general [poisoning] of the organism, paralyze the nervous system, etc." The chemical storage in the village of Izobilne sits next to a water reservoir, supplying the surrounding area.

Across the Crimea, such storehouses may be found in the most unlikely locations. One environmentally unsafe facility is located just 5 km from the Livadiya Palace, renown as the setting for the Yalta Conference between Churchill, Roosevelt and Stalin. Several times a year the palace hosts meetings between various heads of states, but behind the gates sits another storage depot of poisonous chemicals, and all information about it is top secret. About 8 tons of banned toxic substances are stored here.

Even the guards do not know what exactly they are keeping watch over. Viktor Gurlov, one such guard states, "There was some kind of smell coming from down there. What it was, we do not know, we don't have access or keys. Of course, we told our bosses but we don't really pay much attention to it." Chemical experts say such depots are time bombs. Nobody knows when a disaster will strike. They simply hope it won't happen in their time.

Sources: MTV, Moscow, in Russian 21 Jun3 21, 2004;
<http://click.topica.com/caaciqTaVxiqqa6EdHPg/ExpertCity>



Typical pollution of the shore of the Black Sea.

Source: World Information Transfer



GOOD NEWS!

■ International Decision on Heavy Metals

At the 23rd meeting of the Governing Council of the United Nations Environment Programme (UNEP), governments took a step closer to reducing the health and environmental risks from mercury, a heavy metal linked with a wide range of medical problems. Under an

expanded mercury program, they asked UNEP to conduct a study on the amounts of mercury being traded and supplied around the world. Mercury is used in products such as fluorescent light bulbs, dental fillings and thermometers. They also urged action be taken to improve the communication of the risks of mercury to vulnerable groups which include pregnant mothers whose babies may be at risk if the women eat too much mercury-contaminated fish or marine mammals such as seals. Governments agreed to promote 'best available techniques' for reducing mercury emissions from chemical factories and other industrial sites. They agreed to develop partnerships between governments, international organizations, non-governmental organizations and the private sector to reduce mercury pollution with the first pilot projects to be in place by September this year.

An estimated 2,000 tons of new mercury is released to the environment annually, mainly from coal-fired power stations, waste incinerators and as a result of artisanal mining of gold and silver. Under the partnerships, governments will make experts and information on environmentally-friendly techniques available to those countries and industries requesting assistance. The partnership mechanism will also focus on mercury wastes and surplus stockpiles as well as promote research to improve understanding on how mercury moves around the planet.

UNEP was also requested to conduct a global assessment of cadmium and lead transport. Governments want to better understand how the two heavy metals move through the atmosphere, seas and rivers in order to establish whether action at a global level is needed to address the health and environment effects. Cadmium, which is found in products such as batteries, is a known toxin linked with respiratory and gastro-intestinal problems and in acute cases, kidney and skeletal effects. Lead is linked with a variety of health problems including brain damage in young children and effects on the body's cardiovascular and reproductive systems.

UNEP's 2003 global assessment report on mercury indicated that coal-fired power stations and waste incinerators accounted for about 1,500 tons, or 70 percent, of new, quantified man-made mercury emissions to the atmos-

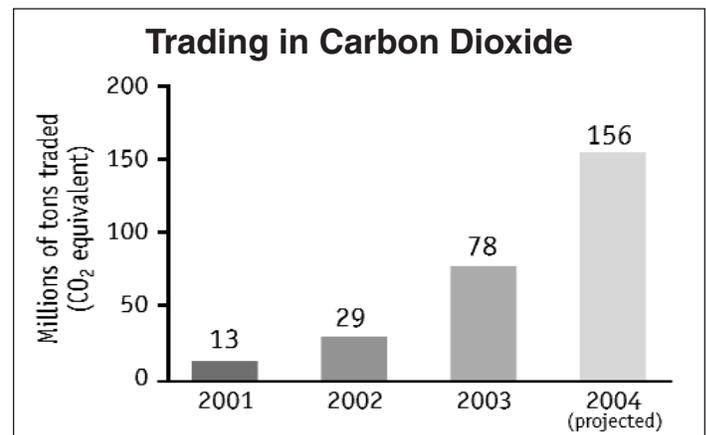
phere. The lion's share is now coming from developing countries with emissions from Asia, at 860 tons, the highest. Artisanal mining of gold and silver, which is occurring in an increasing number of less developed nations, is another significant source of mercury pollution, releasing an estimated 400-500 tons of mercury annually to the air, soils, and waterways.

Once in the atmosphere, this hazardous heavy metal can travel hundreds and thousands of miles, contaminating places far away from the world's sites where the pollution was originally discharged. A study of women in the United States, cited in the new report, has found that about 1 in 12, or just under five million have mercury levels in their bodies above the level considered safe by the United States Environmental Protection Agency. The UNEP Governing Council/Global Ministerial Environment Forum (GC-23/GMEF) took place between February 21-25, 2005, in Nairobi, Kenya. Additional information can be found on the UNEP Governing Council web site at www.unep.org/gc/gc23/

Source: UNEP News Release 2005/14, Nairobi, February 25, 2005

■ Climate Change and the Kyoto Protocol

The Kyoto Protocol entered into force on February 16, 2005, and is expected to serve as an important international device to address our warming climate. Climate change is considered to be one of the most serious threats to sustainable development, with adverse impacts expected on human health, food security, economic



Source: Environmental Defense, Nov./Dec. 2004

activity, human and animal habitats, water and other natural resources, as well as physical infrastructure. The international political response to climate change took shape in 1992 with the adoption of the UN Framework Convention on Climate Change (UNFCCC). The UNFCCC outlines a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases in order to avoid "dangerous anthropogenic interference" with the climate system. Gases to be controlled include methane, nitrous oxide and, in particular, carbon dioxide. The



A heartland power plant: As the U.S. balks, industrialized nations develop cleaner technology.

Source: *Environmental Defense*, Nov./Dec. 2004

UNFCCC entered into force in March 1994 with specific targets varying from country to country. The Kyoto Protocol also established three flexible mechanisms to assist the countries in meeting their national targets. The Protocol entered into force on February 16, 2005, and has been ratified by 141 Parties.

NOTE: Although USA has not ratified the Protocol, US environmental groups have joined forces in pressing for the bipartisan McCain-Lieberman Climate Stewardship Act, which would require nationwide cuts in the pollution that causes global warming.

Source: Online at www.iisd.ca/sd/sdcti/
Earth Negotiations Bulletin, Volume 92, Number 4, Feb. 24-25 2005

Hydrogen Based Buses and Cars

The concept of a hydrogen economy has been around since the 1970's, but Iceland is turning the idea into reality. Iceland has an official goal of making the country oil-free by shifting cars, buses, trucks and ships over to hydrogen by about 2050. Approximately 70 percent of Iceland's energy needs are already met by geothermal or hydro-electric power due to the country's almost unlimited geothermal energy supply beneath its surface. However, producing hydrogen—either by splitting water into its components of hydrogen and oxygen or by separating hydrogen from natural gas or methane—continues to be expensive. Current technology to make hydrogen from burning oil produces more pollution than simply running a bus on oil. Increased engine efficiency would help to solve these problems.

Mazda Motor Corp. has developed the first hydrogen rotary engine powered vehicle which can also run on gasoline when necessary. The system incorporates a 61-liter gasoline tank and a 74-liter, high-pressure (35MPa) hydrogen tank, so drivers need not worry about running out of fuel in areas where hydrogen filling stations have yet to be constructed. The body of the vehicle is based on the Mazda RX-8. The hydrogen rotary engine offers zero carbon dioxide emissions and close to zero nitrogen oxide

emissions while using hydrogen fuel. Since the vehicle can be produced using existing parts and production facilities, it can be put into practical use at low cost. Road tests will provide Mazda with data for assessing the practicality of the vehicle for leasing to government agencies, municipalities and private companies within two years.

Sources: www.planetark.com/dailynewsstory.cfm/newsid/28876/story.htm; (January 10, 2005); www.mazda.com/publicity/release/200410/1027e.html

Reducing the Use of Plastic Bags

In 2003 South Africa banned plastic bags thinner than 30 microns and introduced a plastics levy, some of which goes to a plastic bag recycling company. It has witnessed a decrease in bag litter, a reduction in the manufacture of plastic bags with some layoffs and a growth in alternatives such as canvas bags.

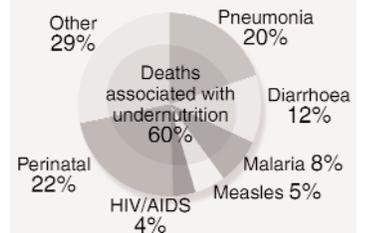
In 2002, Ireland imposed a 15-euro cent levy or surcharge on plastic bags provided by stores and shops. It is estimated that this has reduced the use of plastic bags by 90 per cent. In Australia, the retailer IKEA put a 10 cent charge on its plastic bags while also providing a re-usable alternative. It reports a 97 per cent drop in the use of plastic bags. Rwanda has banned plastics less than 100 microns thick and backed this up with public awareness campaigns. The black plastic bag has disappeared from Kigali.

Source: *UNEP News Release 2005/12*



DID YOU KNOW?

Major causes of death among children under five worldwide, 2000



Source: *EIP/WHO*

Data on Children

According to UNICEF's annual report, *State of the World's Children, 2005*:

- 640 million children do not have adequate shelter
- 500 million children have no access to sanitation
- 400 million children do not have access to safe water
- 300 million children lack access to information (TV, radio or newspapers)
- 270 million children have no access to health care services
- 140 million children, the majority of them girls, have never been to school
- 90 million children are severely food deprived

Source: www.unicef.org



■ World Population Growth

World population grew by 76 million in 2004 resulting from the births of 133 million people and the deaths of 57 million, according to the Earth Policy Institute. This increase in population was concentrated in developing countries, where 73 million people were added com-

pared with 3 million in the developed world.

Source: www.earth-policy.org/Indicators/Pop/2004.htm

■ Diesel Fumes

The deadly effects of breathing diesel fumes came into sharp focus when the Clean Air Task Force (CATF) released a report estimating that diesel fumes kill about 21,000 U.S. citizens each year. Diesel fumes cause an estimated 27,000 nonfatal heart attacks and 410,000 asthma attacks in U.S. adults each year, plus roughly 12,000 cases of chronic bronchitis, 15,000 hospital admissions, 2.4 million lost-work days, and 14 million restricted activity days. The Clean Air Task Force report cites numerous studies revealing that diesel soot degrades the immune system, causes serious, permanent impairment of the nervous system in diesel-exposed railroad workers, induces allergic reactions not limited to asthma. The new report is based on the most recent available data from the US Environmental Protection Agency (EPA).

Source: *Rachel's Environment & Health News*, #807, Published Feb. 24, 2005, www.rachel.org

■ US-Africa Trade

Current United States-Africa trade runs at \$33 billion a year, representing about one percent of U.S. foreign trade. Yet, it is greater than U.S. trade with both Eastern Europe and Russia. Presently, sub-Saharan Africa provides 15 percent of U.S. total oil imports which are predicted to rise to 25 percent by 2015.

Source: www.worldsecuritynetwork.com/ World Security Network Foundation, New York, January 05, 2005

■ UV Radiation Plus Inorganic Arsenic Equals Cancer

Understanding the toxicological impacts of exposures to environmental contaminants is a critical public health challenge. This challenge is intensified by the fact that we may be exposed, either concurrently or sequentially, to a large number of toxic agents throughout our lifetime. Epidemiological studies have shown that inorganic arsenic (arsenite and arsenate) in drinking water increases skin, lung, bladder, and possibly other cancers in humans. However, inorganic arsenic alone does not cause skin cancer in animals. Researchers at the New

York University School of Medicine Superfund Basic Research Program found that mice exposed to arsenite and UV radiation had a dose-related increase in skin cancers compared with mice exposed to UV alone. This is the first demonstration of a linear relationship between arsenite concentration and enhancement of squamous cell carcinomas in UV exposed mice. Since the arsenite doses were well within the range of human exposures, these findings have important implications regarding the potential carcinogenic hazards of low levels of inorganic arsenic in drinking water.

Source: *Superfund Basic Research Program Briefs*, www-apps.niehs.nih.gov/sbrp/researchbriefs/index.cfm

■ Mother's Exposure to Air Pollutants Linked to Chromosome Damage in Babies

A new study of 60 newborns in New York City reveals that a woman's exposure to combustion-related urban air pollution while pregnant may alter the structure of her baby's chromosomes. While previous experiments have linked such genetic alterations to an increased risk of leukemia and other cancers, much larger studies would be required to determine the precise increase in risk as these children reach adulthood. The air pollutants considered in this study can cross the placenta to reach the fetus and include emissions from cars, trucks, bus engines, residential heating, power generation and tobacco smoking. Previous studies showed that combustion-related air pollutants significantly reduce fetal growth, which may affect cognitive development during childhood.

Source: *National Institute of Environmental Health Sciences (NIEHS)* www.niehs.nih.gov/, Press Release, February 15, 2005

Fossil fuel-derived energy contributes to global warming and air pollution, causes local air quality problems (contaminant hot spots, asthma), and has many detrimental external effects (mountain-top removal mining, water quality impacts, transportation spill concerns). Pollution is also impacting our migratory bird species.

Source: *New Jersey Audubon*, Winter 2004-05



Wind farm projects.



VOICES

■ Millennium Project's Task Force on Science, Technology and Innovation

The United Nations Millennium Project's Task Force on Science, Technology and Innovation released its final report, *Innovation: Applying Knowledge in Development* in mid January. The report is the product of over two dozen international experts

from government, academia, and civil society, charged with examining the role of science and technology in addressing the most pressing human needs. Among the major recommendations made by the Task Force, was an emphasis on increasing the capacities of national governments and international organizations to utilize advice from the scientific community in a world increasingly marked by rapid technological change. The Task Force is one of ten commissioned by the United Nations Secretary-General as part of the Millennium Project to develop practical strategies for achieving the Millennium Development Goals—targets for reducing poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women by 2015. The full report is available at <http://bcsia.ksg.harvard.edu/publication.cfm?program>

■ The State of the World's Children 2005: Childhood Under Threat

The 10th annual report by UNICEF on the condition of the world's children, launched in December 2004, examines three of the most widespread and devastating factors threatening childhood today: HIV/AIDS, conflict, and poverty. The report argues that children experience poverty differently from adults and that traditional income or consumption measurements do not capture how poverty actually affects childhood. The report offers an analysis of the seven basic "deprivations" that children feel and which have a powerful impact on their futures. Working with researchers at the London School of Economics and Bristol University, UNICEF concluded that more than half the children in the developing world are severely deprived of one or more of the goods and services essential to childhood. The report states that poverty is not exclusive to developing countries. In 11 of 15 industrialized nations for which comparable data are available, the proportion of children living in low-income households during the last decade has risen. The report outlines where the world stands on a ten-point agenda to protect children from conflict, first enunciated by UNICEF in 1995, and finds that although some progress has been made it has been far from sufficient to amelio-

rate the impact of war on children's lives. The impact of HIV/AIDS on children is seen most dramatically in the wave of AIDS orphans that has now grown to 15 million worldwide. HIV/AIDS is not only killing parents but is destroying the protective network of adults in children's lives. Because of the time lag between HIV infection and death from AIDS, the crisis will worsen for at least the next decade, even if new infections were to immediately stabilize or begin to fall. Further information is information is available at www.unicef.org

■ Health and Environment: Tools for Effective Decision-making

The World Health Organization and the UN Environment Programme initiated a partnership program at the 2002 World Summit for Sustainable Development to assist developing countries reduce threats to human health from environmental degradation. UNEP and WHO offer partner countries support in making sound policy decisions by increasing their access to "existing knowledge, tools and methods for making good policy decisions on environment and health." Called the Health and Environment Linkages Initiative or HELI, the partnership program is funded by Health Canada and Environment Canada, sponsored by the Canadian government and supported by the US Environment and Protection Agency. Further information is available at www.who.int/phe or email at: heli@who.int

■ Sustainable Development International E-Newsletter

Published on line by Sustainable Development International (SDI) the electronic newsletter provides information for business about Corporate Social Responsibility, or CSR. According to their mission statement, the SDI e-newsletter is one way the organization attempts to influence effective sustainable development policy. See their web site at www.sustdev.org/

■ Fourth World Wind Energy Conference and Exhibition

The event will be held from 2–5 November 2005, in Melbourne, Australia. Organized by World Wind Energy Association, this conference will consider the latest issues facing the wind energy sector, including the impact of the Kyoto Protocol's entry into force and plans to implement the Millennium Declaration and Millennium Development Goals. Other issues on the agenda include the linkages between wind power and water management, desalination, human health, off-grid systems, financing and training. The conference will also include an exhibition on wind energy facilities and technologies. For more information, contact: Conference Organizers; tel: +61-3-9417-0888; fax: +61-3-9417-0899; e-mail: wwec2005@meetingplanners.com.au; Internet: www.wwec2005.com/index.shtml

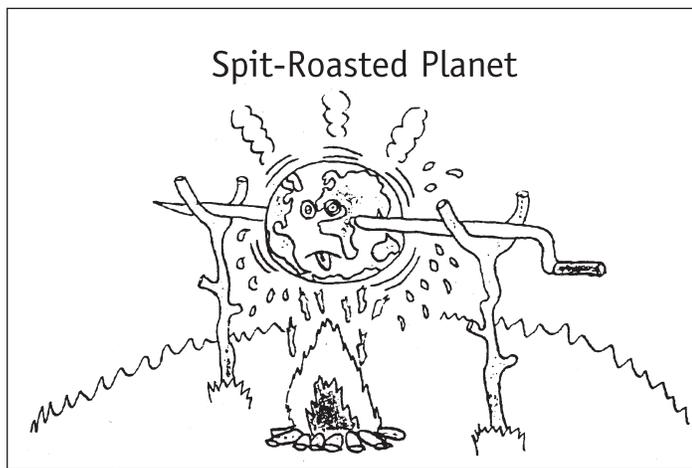
■ First Kyoto Protocol Meeting in Montreal

Canada will host the first Meeting of the Parties to the Kyoto Protocol in Montreal in conjunction with the

eleventh session of the Conference of the Parties to the Climate Change Convention. The Conference will take place from 28 November to 9 December 2005 at the Palais des Congrès de Montréal. Decision to host this historic meeting underlines Canada's commitment to the UNFCCC process. The Canadian Minister of the Environment, Stéphane Dion, declared: "We hope that the meeting in Montreal will help identify how all the international family can contribute to the effort while developing a thriving economy for everyone, on all continents—an economy that will be clean and climate-friendly."

■ Solar World Congress, 2005

The congress will take place from August 6–12, 2005, in Orlando, Florida, USA. The event is expected to bring together researchers, scientists, engineers, architects, designers and other renewable energy professionals to discuss solar energy issues. In particular, the Congress will consider linkages between solar and water issues under the theme, "Bringing Water to the World." For more information, contact: American Solar Energy Society; tel: +1-303-443-3130 ext.103; fax: +1-303-443-3212; e-mail: bchowe@ases.org; Internet: <http://www.swc2005.org>



Source: *Rescue Mission: Planet Earth*

■ OTUSA Project in Botswana

Aimed at medical students, this project is an effort to expand knowledge of the relationship between tuberculosis (TB) and HIV disease in a resource-poor country setting. The project provides technical assistance, consultation, and funding, implements programs, and conducts research with the Botswana government and other local and international partners for prevention, care and support, and surveillance of HIV/AIDS, tuberculosis, and sexually transmitted diseases (STDs). The hope is that information gleaned from this project can be used to develop prevention strategies for the local and global control of TB and HIV, contributing to "a healthier Botswana." Using this research as a base, BOTUSA programs have included: facilitating voluntary counseling and testing centers, developing prevention of mother-to-

child HIV transmission, educational materials and training, producing a Setswana radio serial drama, supporting the Youth Health Organization (YOHO) to offer youth reproductive health education, conducting a nationwide door-to-door HIV education program, and developing Botswana-specific HIV/AIDS materials for students at the primary and secondary levels with the Ministry of Education. Further information is available at <http://www.comminit.com/africa/experiences/pds32004/experiences-2493.html> (From *The Drum Beat*—Issue 287).

POINT OF VIEW:

continued from page 16

notes that, "improvements in women's education were responsible for 43 percent of the reduction in child malnutrition in the developing world in the last 25 years."

In most cases, the family is the first "educational institution," and the mother is generally the first educator. She has the earliest opportunity to teach behaviors that would support sustainable development. In order for her to accomplish this, she must be knowledgeable, she must be powerful, and she must be free, within the framework of the family at the very least. She has to stay informed with current knowledge about environmental issues that affect her family's health and safety. She has to have command of her family in order for her children to respect what she teaches. She has to have freedom to take action when necessary. Most of the world's women lack the power to teach sustainable development to their children.

Reproductive health defined broadly includes access to contraception and abortion, freedom from violence at home and in the community, knowledge about STDs and other relevant diseases, and mental health. The effectiveness of information and contraception is enhanced when men are willing to change their age old misogynist stereotypes. The *WorldWatch* study indicates that workshops held in Nicaragua improved men's communication skills, which "led to less domestic violence." In Belize and Malaysia the criminal code was changed to make domestic violence a criminal offense.

When women hold political office, issues relevant to women's lives and family life increase in importance and are brought to the forefront of political discussion. Ultimately, laws supporting women's empowerment are likely to come into existence when more women enter government. Some men continue to feel threatened by the advances women are making and the inevitable changes in all spheres of life that follow. The Decade of Education for Sustainable Development can strengthen specific initiatives to expand women's rights by confronting sex role stereotypes and prejudice against women as part of each program it endorses. In this way, the Decade's lofty vision could have tangible results beneficial to all.

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World Information Transfer, Inc. (WIT) is a not-for-profit, non-governmental organization in General 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:

- **World Ecology Report (WER).** Published since 1989, the World Ecology Report is a quarterly digest of critical issues in health and environment, produced in four languages and distributed to thousands of citizens throughout the developing and developed world.
- **Health and Environment: Global Partners for Global Solutions Conference.** Since 1992, WIT has convened what we believe to be one of the world's premier forums for the presentation of scientific papers by international experts on the growing clinical evidence supporting the link between degrading environments and diminished human health. The conference has been convened as a parallel event to the annual meeting of the UN Commission on Sustainable Development. The scientific papers presented at the conference are available on WIT's web site.
- **Human Information CD ROM library.** This project consists of a library of CDs each of which focuses on a subject within the overall topic of Development and Health information. Our Human Information CD ROM Library offers one bridge across the "digital divide" for both developed and developing countries. The project is continuous with future topics being developed.
- **Humanitarian Aid.** WIT provides humanitarian relief to hospitals and orphanages in areas devastated by environmental degradation. Our shipments have included medical equipment for pediatric medical facilities, computer and telephone systems, clothing, toys, prosthetic devices for gifted children.
- **www.worldinfo.org** WIT provides through its web site up to date science based information on the relationship between human health and the natural environment, including the papers from the WIT's annual conference and the World Ecology Reports.
- **Internship Program.** WIT provides an internship program for young people interested in international diplomacy, international health, and sustainable development.
- **Centers for Health & Environment.** Centers for Health & Environment. The aim of the Centers is to promote research, education, and solutions. The first center was opened in Ukraine in 1992; the second center opened in Beirut, Lebanon in 1997 at Bir Hasan, United Nations Street, Al-Salaam Building.

WIT operates from headquarters in New York City with regional representatives in Australia, Belgium, Canada, Costa Rica, Egypt, France, Germany, Netherlands, Israel, Japan, Korea, Lebanon, Morocco, Pakistan, Romania, Spain, Sweden, Switzerland, Ukraine and USA.

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POINT OF VIEW:

Women and Sustainable Development Education

"The Decade of Education for Sustainable Development pursues a global vision...where everyone has the opportunity to benefit from quality education and learn the values, behaviour and lifestyles required for a sustainable future and for positive societal transformation." (From the DESD Draft International Implementation Scheme)

THE LOFTY OBJECTIVE of UNESCO's Decade of Education for Sustainable Development (DESD) is easy to embrace but difficult to apply. Since the concept of sustainable development entered international agendas three decades ago, hopeful visions of sustainable living have been turned into specific programs and projects since the Rio Summit in 1992. Using the three pillars concept of sustainable development, the Decade looks at education from the environmental, economic, and social perspectives linked through culture. It is one thing to laud the

changes possible through education and quite another to examine who is doing the educating, and who is receiving it. These are questions of culture.

If the Decade of Education for Sustainable Development is going to have genuine impact, it has to set its sites on a specific cultural link within the overall framework of sustainable development, and we suggest UNESCO target the Decade to the continued expansion of women's rights. Sex role stereotypes and misogynist attitudes towards females are part of a repressive culture passed on through various forms of education including religion, rites of passage, family structure, penal codes and schools. The opportunity for changing culture by confronting traditional prejudices and behaviors is possible only through changes in both formal and informal education guaranteed by governments.

Research over the last ten years supports women's empowerment as the key to sustainable development. Empowerment rests on acquiring basic literacy and computational skills and on reproductive rights. According to *WorldWatch* paper (161) *Correcting Gender Myopia*, in sub-Saharan Africa, Botswana, Kenya, and Zimbabwe have "the highest levels of female schooling" and in concert "the lowest levels of child mortality and fertility," although their poverty rate is higher than other nations in the region. However, sub-Saharan Africa and southern and western Asia lag behind in equalizing educational opportunities for girls as noted by Rachel Mayanja, Special Adviser to the Secretary-General on Gender Issues and Advancement of Women. The *WorldWatch* paper further



Woman worker in Ukraine cleaning the street. Photo by WIT

Point of View continued on page 14



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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