DOWNLOAD PDF POLLUTION: THE WORLD CRISIS

Chapter 1 : Pollution - Wikipedia

In the 21 st century air pollution is a major cause of death, according to the World Health Organization (WHO), in around 7 million people died - one in eight of total global deaths - as a result of exposure to air pollution.

When The Mermaids Cry: Introduction The world population is living, working, vacationing, increasingly conglomerating along the coasts, and standing on the front row of the greatest, most unprecedented, plastic waste tide ever faced. For more than 50 years, global production and consumption of plastics have continued to rise. An estimated million tons of plastics were produced in , representing a 4 percent increase over , and confirming and upward trend over the past years. Worldwatch Institute â€" January In , our global plastic consumption worldwide has been estimated at million tons, and, according to a report by Global Industry Analysts, plastic consumption is to reach Plastic is versatile, lightweight, flexible, moisture resistant, strong, and relatively inexpensive. Those are the attractive qualities that lead us, around the world, to such a voracious appetite and over-consumption of plastic goods. However, durable and very slow to degrade, plastic materials that are used in the production of so many products all, ultimately, become waste with staying power. Our tremendous attraction to plastic, coupled with an undeniable behavioral propensity of increasingly over-consuming, discarding, littering and thus polluting, has become a combination of lethal nature. Although inhabited and remote, South Sentinel island is covered with plastic! All over the world the statistics are ever growing, staggeringly. Tons of plastic debris which by definition are waste that can vary in size from large containers, fishing nets to microscopic plastic pellets or even particles is discarded every year, everywhere, polluting lands, rivers, coasts, beaches, and oceans. In , the annual input is estimated to be about twice greater, or 10 bags full of plastic per foot of coastline. So the cumulative input for would be nearly 20 times the 8 million metric tons estimate â€" bags of plastic per foot of coastline in the world! Lying halfway between Asia and North America, north of the Hawaiian archipelago, and surrounded by water for thousands of miles on all sides, the Midway Atoll is about as remote as a place can get. Then, on shore, the spectacle becomes even more poignant, as thousands of bird corpses rest on these beaches, piles of colorful plastic remaining where there stomachs had been. In some cases, the skeleton had entirely biodegraded; yet the stomach-size plastic piles are still present, intact. Witnesses have watched in horror seabirds choosing plastic pieces, red, pink, brown and blue, because of their similarity to their own food. It is estimated that of the 1. Albatross, victim of plastic ingestion. From the whale, sea lions, and birds to the microscopic organisms called zooplankton, plastic has been, and is, greatly affecting marine life on shore and off shore. According to the National Oceanographic and Atmospheric Administration, plastic debris kills an estimated , marine mammals annually, as well as millions of birds and fishes. However, most of the littered plastic waste worldwide ultimately ends up at sea. The plastic waste tide we are faced with is not only obvious for us to clearly see washed up on shore or bobbing at sea. Most disconcertingly, the overwhelming amount and mass of marine plastic debris is beyond visual, made of microscopic range fragmented plastic debris that cannot be just scooped out of the ocean. Extremely littered beach in northern Norway. Some plastic pellets had fragmented to particles thinner than the diameter of a human hair. But while some cannot be seen, those pieces are still there and are still plastic. The study presents an alarming fact: It took at first a magnifying-glass to see the true extent of plastic damage in the North Pacific. Inside was murky seawater with hundreds of fragmented plastics pieces: All sea creatures, from the largest to the microscopic organisms, are, at one point or another, swallowing the seawater soup instilled with toxic chemicals from plastic decomposition. In essence, humans are eating their own waste. Manan Vastsyayana The scientists from Project Kaisei and Scripps hope their data gives clues as to the density and extent of these debris, especially since the Great Pacific Garbage Patch might have company in the Southern Hemisphere, where scientists say the gyre is four times bigger. A plastic-poison has undeniably been instilled by us, prompting an unwilling and illegitimate confrontation of two titans: The crisis is of massive proportion. The Great Plastic Tide: Magnitude, Scope, Extent A full understanding of the magnitude and scope of this plastic pollution starts with clear definitions as to what and why it is happening. Dimitar Dilkoff Marine Debris The term marine debris has been used for at least 25 years to refer to man-made materials that

have been discarded or lost into the ocean. This workshop came out of a request from the Marine Mammal Commission to the National Marine Fisheries Service to examine the impacts of marine debris. At that time, the focus of research was primarily on derelict fishing gear. Other terms used prior to include the following: It would appear that the term debris was being used in these articles by academics as something discarded: Plastic certainly makes up the majority of floating litter, but in some areas the debris on the ocean floor may contain sizeable amounts of those other denser types. Marine debris is definitely characterized as human-created waste that has deliberately or accidentally become afloat. They tend to accumulate at the centre of gyres and on coastlines, frequently washing aground where it is known as beach litter. Coast Guard, to promulgate a definition of marine debris for the purposes of the Act. The definition is this: Types and components of marine debris include plastics, glass, metal, Styrofoam, rubber, derelict fishing gear, and derelict vessels. Plastic pollution covering the shore, Morocco. It affects the economies and inhabitants of coastal and waterside communities worldwide. The effect of coastal littering is obviously compounded by vectors, such as rivers and storm drains, discharging litter from inland urban areas. The other 20 percent of this debris is from dumping activities on the water, including vessels from small power and sailboats to large transport ships carrying people and goods , offshore drilling rigs and platforms, and fishing piers. Over the past 60 years, organic materials, once the most common form of debris, have yielded to synthetic elements as the most abundant material in solid waste. Marine litter is now 60 to 80 percent plastic, reaching 95 percent in some areas, according to a report by the Algalita Marine Research Foundation created by Charles Moore , published in October in Environmental Research. Citarum River, flowing to the Sea, is the main source of household water for Jakarta. Held the third Saturday of each September, the International Coastal Cleanup engages the public to remove trash and debris from the coasts, beaches, waterways, underwater, and on lands to identify the sources of debris. It is a compelling global snapshot of marine debris collected on one day at thousands of sites all over the world. The overwhelming percentage of debris collected was plastics and smoking paraphernalia. The report states that plastic litter has increased by percent since ICC first survey in Durable and slow to degrade, plastic materials that are used in the production of so many products, from containers for beverage bottles, packing straps and tarps, and synthetic nylon materials used in fishing line, all become debris with staying power. Plastics debris accumulates because it does not biodegrade as many other substances do; although it will photo degrade on exposure to sunlight and does decompose, more rapidly than previously thought. We will explain these processes as we study the nature and properties of plastic itself infra. In addition, most of these plastic waste items are highly buoyant, allowing them to travel in currents for thousands of miles, endangering marine ecosystems and wildlife along the way. Marine debris is a global transboundary pollution problem. The marine area around Iceland is considered as one of the cleanest of the world. Clean up the Coastline, Veraldarvinir The instillation of plastic in an oceanic world vests a terrible reality. Because of the properties of plastic as a synthetic material and because of the absence of boundary, vastness, currents and winds at seas, this resilient polluting material is being spread worldwide by an even more powerful vehicle, the seas. It appears then daunting, impossible, a priori, to control, efficiently clean-up, remedy effectively, even sufficiently study the plastic pollution. This unwilling confrontation of titans, one plastic the other oceanic, has become ineluctably a crisis of massive proportion. Seventy percent of the mass eventually sinks, damaging life on the seabed. Seal trapped in plastic pollution. Facts About Plastic What is plastic? A simple definition could be: They are often known by trademark names, as Bakelite, Vinylite, or Lucite. In chemistry, plastics are large molecules, called polymers, composed of repeated segments, called monomers, with carbon backbones. A polymer is simply a very large molecule made up of many smaller units joined together, generally end to end, to create a long chain. The smallest building block of a polymer is called a monomer. Polymers are divided into two distinct groups: Alexander Parkes created the first man-made plastic and publicly demonstrated it at the Great International Exhibition in London. The material, called parkesine, was an organic material derived from cellulose that, once heated, could be molded and retained its shape when cooled. Many, but not all, plastic products have a number â€” the resin identification code â€” molded, formed or imprinted in or on the container, often on the bottom. This system of coding was developed in by the U. It is indeed, quite interesting to go through the fine lines. Polyethylene terephthalate PET or PETE

â€” Used in soft drink, juice, water, beer, mouthwash, peanut butter, salad dressing, detergent, and cleaner containers. Leaches antimony trioxide and 2ethylhexyl phthalate DEHP. DEHP is an endocrine disruptor that mimics the female hormone estrogen. It has been strongly linked to asthma and allergies in children. It may cause certain types of cancer and it has been linked to negative effects on the liver, kidney, spleen, bone formation, and body weight. In Europe, DEHP has been banned since from use in plastic toys for children under the age of three. High-density polyethylene HDPE â€” Used in opaque milk, water, and juice containers, bleach, detergent and shampoo bottles, garbage bags, yogurt and margarine tubs, and cereal box liners. Considered a safer plastic. Research on risks associated with this type of plastic is ongoing. PVC has been described as one of the most hazardous consumer products ever created. DEHP and BBzP are endocrine disruptors mimicking the female hormone estrogen; have been strongly linked to asthma and allergic symptoms in children; may cause certain types of cancer; and linked to negative effects on the liver, kidney, spleen, bone formation, and body weight. Not so elsewhere, including Canada and the United States. Dioxins are unintentionally, but unavoidably, produced during the manufacture of materials containing chlorine, including PVC and other chlorinated plastic feedstocks. Dioxin is a known human carcinogen and the most potent synthetic carcinogen ever tested in laboratory animals.

Chapter 2 : Causes and Solutions to the Global Energy Crisis - Conserve Energy Future

The world is waking up to a crisis of ocean plasticâ€"and we're tracking the developments and solutions as they happen. National Geographic is committed to reducing plastics pollution.

Pollution started from prehistoric times , when man created the first fires. According to a article in the journal Science, " soot " found on ceilings of prehistoric caves provides ample evidence of the high levels of pollution that was associated with inadequate ventilation of open fires. Core samples of glaciers in Greenland indicate increases in pollution associated with Greek, Roman, and Chinese metal production. The Industrial Revolution brought an infusion of untreated chemicals and wastes into local streams that served as the water supply. King Edward I of England banned the burning of sea-coal by proclamation in London in , after its smoke became a problem; [6] [7] the fuel was so common in England that this earliest of names for it was acquired because it could be carted away from some shores by the wheelbarrow. It was the industrial revolution that gave birth to environmental pollution as we know it today. London also recorded one of the earlier extreme cases of water quality problems with the Great Stink on the Thames of , which led to construction of the London sewerage system soon afterward. Pollution issues escalated as population growth far exceeded viability of neighborhoods to handle their waste problem. Reformers began to demand sewer systems and clean water. August Bebel recalled conditions before a modern sewer system was built in the late s: There were no public toilets in the streets or squares. Visitors, especially women, often became desperate when nature called. In the public buildings the sanitary facilities were unbelievably primitive As a metropolis, Berlin did not emerge from a state of barbarism into civilization until after A British expert in concluded that Berlin represented "the most complete application of science, order and method of public life," adding "it is a marvel of civic administration, the most modern and most perfectly organized city that there is. Chicago and Cincinnati were the first two American cities to enact laws ensuring cleaner air in Pollution became a major issue in the United States in the early twentieth century, as progressive reformers took issue with air pollution caused by coal burning, water pollution caused by bad sanitation, and street pollution caused by the 3 million horses who worked in American cities in , generating large quantities of urine and manure. As historian Martin Melosi notes, The generation that first saw automobiles replacing the horses saw cars as "miracles of cleanliness. Extreme smog events were experienced by the cities of Los Angeles and Donora, Pennsylvania in the late s, serving as another public reminder. Awareness of atmospheric pollution spread widely after World War II, with fears triggered by reports of radioactive fallout from atomic warfare and testing. National news stories in the late sâ€"especially the long-term dioxin contamination at Love Canal starting in and uncontrolled dumping in Valley of the Drums â€"led to the Superfund legislation of The development of nuclear science introduced radioactive contamination , which can remain lethally radioactive for hundreds of thousands of years. Lake Karachay â€"named by the Worldwatch Institute as the "most polluted spot" on earthâ€"served as a disposal site for the Soviet Union throughout the s and s. Chelyabinsk , Russia, is considered the "Most polluted place on the planet". The toll on the worst-affected populations and the growth since then in understanding about the critical threat to human health posed by radioactivity has also been a prohibitive complication associated with nuclear power. Though extreme care is practiced in that industry, the potential for disaster suggested by incidents such as those at Three Mile Island and Chernobyl pose a lingering specter of public mistrust. Worldwide publicity has been intense on those disasters. The borderless nature of atmosphere and oceans inevitably resulted in the implication of pollution on a planetary level with the issue of global warming. Though their effects remain somewhat less well understood owing to a lack of experimental data, they have been detected in various ecological habitats far removed from industrial activity such as the Arctic, demonstrating diffusion and bioaccumulation after only a relatively brief period of widespread use. A much more recently discovered problem is the Great Pacific Garbage Patch , a huge concentration of plastics, chemical sludge and other debris which has been collected into a large area of the Pacific Ocean by the North Pacific Gyre. This is a less well known pollution problem than the others described above, but nonetheless has multiple and serious consequences such as increasing wildlife mortality, the spread of invasive species and

human ingestion of toxic chemicals. Organizations such as 5 Gyres have researched the pollution and, along with artists like Marina DeBris , are working toward publicizing the issue. Pollution introduced by light at night is becoming a global problem, more severe in urban centres, but nonetheless contaminating also large territories, far away from towns. Blue drain and yellow fish symbol used by the UK Environment Agency to raise awareness of the ecological impacts of contaminating surface drainage. The major forms of pollution are listed below along with the particular contaminant relevant to each of them: Common gaseous pollutants include carbon monoxide , sulfur dioxide , chlorofluorocarbons CFCs and nitrogen oxides produced by industry and motor vehicles. Photochemical ozone and smog are created as nitrogen oxides and hydrocarbons react to sunlight. Particulate matter , or fine dust is characterized by their micrometre size PM10 to PM2. Radioactive contamination , resulting from 20th century activities in atomic physics , such as nuclear power generation and nuclear weapons research, manufacture and deployment. See alpha emitters and actinides in the environment. Thermal pollution , is a temperature change in natural water bodies caused by human influence, such as use of water as coolant in a power plant. Water pollution , by the discharge of wastewater from commercial and industrial waste intentionally or through spills into surface waters ; discharges of untreated domestic sewage , and chemical contaminants, such as chlorine , from treated sewage; release of waste and contaminants into surface runoff flowing to surface waters including urban runoff and agricultural runoff, which may contain chemical fertilizers and pesticides ; also including human feces from open defecation - still a major problem in many developing countries ; groundwater pollution from waste disposal and leaching into the ground, including from pit latrines and septic tanks ; eutrophication and littering. Pollutant A pollutant is a waste material that pollutes air, water, or soil. Three factors determine the severity of a pollutant: Cost of pollution Pollution has a cost. A manufacturing activity that causes air pollution is an example of a negative externality in production. Because responsibility or consequence for self-directed action lies partly outside the self, an element of externalization is involved. If there are external benefits, such as in public safety , less of the good may be produced than would be the case if the producer were to receive payment for the external benefits to others. However, goods and services that involve negative externalities in production, such as those that produce pollution, tend to be over-produced and underpriced since the externality is not being priced into the market. Sometimes firms choose, or are forced by regulation, to reduce the amount of pollution that they are producing. The associated costs of doing this are called abatement costs, or marginal abatement costs if measured by each additional unit. This utility comes from the consumption of goods and services that create pollution. Therefore, it is important that policymakers attempt to balance these indirect benefits with the costs of pollution in order to achieve an efficient outcome. It is possible to use environmental economics to determine which level of pollution is deemed the social optimum. At this point the damage of one extra unit of pollution to society, the marginal cost of pollution, is exactly equal to the marginal benefit of consuming one more unit of the good or service. If the social costs of pollution are higher than the private costs incurred by the firm, then the true supply curve will be higher. The point at which the social marginal cost and market demand intersect gives the socially optimal level of pollution. At this point, the quantity will be lower and the price will be higher in comparison to the free market equilibrium. Some examples include tariffs , a carbon tax and cap and trade systems. Sources and causes Play media Air pollution produced by ships may alter clouds, affecting global temperatures. Air pollution comes from both natural and human-made anthropogenic sources. However, globally human-made pollutants from combustion, construction, mining, agriculture and warfare are increasingly significant in the air pollution equation. Principal stationary pollution sources include chemical plants , coal-fired power plants , oil refineries , [38] petrochemical plants, nuclear waste disposal activity, incinerators, large livestock farms dairy cows, pigs, poultry, etc. Agricultural air pollution comes from contemporary practices which include clear felling and burning of natural vegetation as well as spraying of pesticides and herbicides [39] About million metric tons of hazardous wastes are generated each year. Humans have ways to cut greenhouse gas emissions and avoid the consequences of global warming, a major climate report concluded. In a series of press reports culminating in a book called Fateful Harvest unveiled a widespread practice of recycling industrial byproducts into fertilizer, resulting in the contamination of the soil with various metals. Ordinary municipal landfills are the

source of many chemical substances entering the soil environment and often groundwater , emanating from the wide variety of refuse accepted, especially substances illegally discarded there, or from pre landfills that may have been subject to little control in the U. There have also been some unusual releases of polychlorinated dibenzodioxins , commonly called dioxins for simplicity, such as TCDD. For example, hurricanes often involve water contamination from sewage, and petrochemical spills from ruptured boats or automobiles. Larger scale and environmental damage is not uncommon when coastal oil rigs or refineries are involved. Some sources of pollution, such as nuclear power plants or oil tankers , can produce widespread and potentially hazardous releases when accidents occur. In the case of noise pollution the dominant source class is the motor vehicle , producing about ninety percent of all unwanted noise worldwide. Ozone pollution can cause respiratory disease , cardiovascular disease , throat inflammation, chest pain, and congestion. Water pollution causes approximately 14, deaths per day, mostly due to contamination of drinking water by untreated sewage in developing countries. An estimated million Indians have no access to a proper toilet, [52] [53] Over ten million people in India fell ill with waterborne illnesses in , and 1, people died, most of them children. Noise pollution induces hearing loss , high blood pressure , stress , and sleep disturbance. Mercury has been linked to developmental deficits in children and neurologic symptoms. Older people are majorly exposed to diseases induced by air pollution. Those with heart or lung disorders are at additional risk. Children and infants are also at serious risk. Lead and other heavy metals have been shown to cause neurological problems. Chemical and radioactive substances can cause cancer and as well as birth defects. An October study by the Lancet Commission on Pollution and Health found that global pollution, specifically toxic air, water, soils and workplaces, kill nine million people annually, which is triple the number of deaths caused by AIDS, tuberculosis and malaria combined, and 15 times higher than deaths caused by wars and other forms of human violence. There are a number of effects of this: Biomagnification describes situations where toxins such as heavy metals may pass through trophic levels , becoming exponentially more concentrated in the process. The emission of greenhouse gases leads to global warming which affects ecosystems in many ways. Invasive species can out compete native species and reduce biodiversity. Invasive plants can contribute debris and biomolecules allelopathy that can alter soil and chemical compositions of an environment, often reducing native species competitiveness. Nitrogen oxides are removed from the air by rain and fertilise land which can change the species composition of ecosystems. Smog and haze can reduce the amount of sunlight received by plants to carry out photosynthesis and leads to the production of tropospheric ozone which damages plants. Soil can become infertile and unsuitable for plants. This will affect other organisms in the food web. Sulfur dioxide and nitrogen oxides can cause acid rain which lowers the pH value of soil. Organic pollution of watercourses can deplete oxygen levels and reduce species diversity. This web site includes links to databases, bibliographies, tutorials, and other scientific and consumer-oriented resources. Worker productivity A number of studies show that pollution has an adverse effect on the productivity of both indoor and outdoor workers. Pollution control A litter trap catches floating waste in the Yarra River , east-central Victoria , Australia Air pollution control system, known as a Thermal oxidizer , decomposes hazard gases from industrial air streams at a factory in the United States of America. Pollution control is a term used in environmental management. It means the control of emissions and effluents into air, water or soil.

Chapter 3 : Global air pollution crisis 'must not be left to private sector' | Environment | The Guardian

The Global Crisis of Plastic Pollution Cleaning up the ocean will require an international agreement on par with the Paris climate accord.

There is no denying that. However, as our environment changes, so does the need to become increasingly aware of the problems that surround it. With a massive influx of natural disasters, warming and cooling periods, different types of weather patterns and much more, people need to be aware of what types of environmental problems our planet is facing. Global warming has become an undisputed fact about our current livelihoods; our planet is warming up and we are definitely part of the problem. All across the world, people are facing a wealth of new and challenging environmental problems every day. Some of them are small and only affect a few ecosystems, but others are drastically changing the landscape of what we already know. Our planet is poised at the brink of a severe environmental crisis. Current environmental problems make us vulnerable to disasters and tragedies, now and in the future. We are in a state of planetary emergency, with environmental problems piling up high around us. Unless we address the various issues prudently and seriously we are surely doomed for disaster. Current environmental problems require urgent attention. Pollution of air, water and soil require millions of years to recoup. Industry and motor vehicle exhaust are the number one pollutants. Heavy metals, nitrates and plastic are toxins responsible for pollution. While water pollution is caused by oil spill, acid rain, urban runoff; air pollution is caused by various gases and toxins released by industries and factories and combustion of fossil fuels; soil pollution is majorly caused by industrial waste that deprives soil from essential nutrients. Climate changes like global warming is the result of human practices like emission of Greenhouse gases. The population of the planet is reaching unsustainable levels as it faces shortage of resources like water, fuel and food. Population explosion in less developed and developing countries is straining the already scarce resources. Intensive agriculture practiced to produce food damages the environment through use of chemical fertilizer, pesticides and insecticides. Overpopulation is one of the crucial current environmental problem. Natural resource depletion is another crucial current environmental problems. Fossil fuel consumption results in emission of Greenhouse gases, which is responsible for global warming and climate change. Globally, people are taking efforts to shift to renewable sources of energy like solar, wind, biogas and geothermal energy. The cost of installing the infrastructure and maintaining these sources has plummeted in the recent years. The over consumption of resources and creation of plastics are creating a global crisis of waste disposal. Developed countries are notorious for producing an excessive amount of waste or garbage and dumping their waste in the oceans and, less developed countries. Nuclear waste disposal has tremendous health hazards associated with it. Plastic, fast food, packaging and cheap electronic wastes threaten the well being of humans. Waste disposal is one of urgent current environmental problem. Climate change is yet another environmental problem that has surfaced in last couple of decades. It occurs due to rise in global warming which occurs due to increase in temperature of atmosphere by burning of fossil fuels and release of harmful gases by industries. Climate change has various harmful effects but not limited to melting of polar ice, change in seasons, occurrence of new diseases, frequent occurrence of floods and change in overall weather scenario. Human activity is leading to the extinction of species and habitats and and loss of bio-diversity. Eco systems, which took millions of years to perfect, are in danger when any species population is decimating. Balance of natural processes like pollination is crucial to the survival of the eco-system and human activity threatens the same. Another example is the destruction of coral reefs in the various oceans, which support the rich marine life. Our forests are natural sinks of carbon dioxide and produce fresh oxygen as well as helps in regulating temperature and rainfall. Deforestation simply means clearing of green cover and make that land available for residential, industrial or commercial purpose. It is a direct impact of excessive production of CO2. The main impact is on shellfish and plankton in the same way as human osteoporosis. Once these toxic gases reach the upper atmosphere, they cause a hole in the ozone layer, the biggest of which is above the Antarctic. Ozone layer is valuable because it prevents harmful UV radiation from reaching the earth. This is one of the most important current environmental problem. Acid rain

occurs due to the presence of certain pollutants in the atmosphere. Clean drinking water is becoming a rare commodity. Water is becoming an economic and political issue as the human population fights for this resource. One of the options suggested is using the process of desalinization. Industrial development is filling our rivers seas and oceans with toxic pollutants which are a major threat to human health. Urban sprawl refers to migration of population from high density urban areas to low density rural areas which results in spreading of city over more and more rural land. Urban sprawl results in land degradation, increased traffic, environmental issues and health issues. The ever growing demand of land displaces natural environment consisting of flora and fauna instead of being replaced. The current environmental problems pose a lot of risk to health of humans, and animals. Dirty water is the biggest health risk of the world and poses threat to the quality of life and public health. Run-off to rivers carries along toxins, chemicals and disease carrying organisms. Pollutants cause respiratory disease like Asthma and cardiac-vascular problems. High temperatures encourage the spread of infectious diseases like Dengue. Genetic modification of food using biotechnology is called genetic engineering. Genetic modification of food results in increased toxins and diseases as genes from an allergic plant can transfer to target plant. Genetically modified crops can cause serious environmental problems as an engineered gene may prove toxic to wildlife. Another drawback is that increased use of toxins to make insect resistant plant can cause resultant organisms to become resistant to antibiotics. The need for change in our daily lives and the movements of our government is growing. If humans continue moving forward in such a harmful way towards the future, then there will be no future to consider. By raising awareness in your local community and within your families about these issues, you can help contribute to a more environmentally conscious and friendly place for you to live.

Chapter 4 : Is China worsening the developing world's environmental crisis?

Water pollution is a significant problem around the world, including the United States. Deteriorating infrastructure only adds to an already challenging problem. Safe Drinking Water Is Becoming More Difficult to Obtain.

Complete this form below to receive your free program brochure. Health complications related to air pollution kill more people than AIDS and malaria combined. Clearly, significant changes need to be implemented to have a strong impact on reducing air pollution rates. Even though carbon monoxide rates have lowered in the U. Other countries are even worse. The first step you can take is to educate yourself through a Master of Public Health program like the online one offered at The University of Arizona. If public health officials work together, they might be able to make strides toward lowering these rates. But what are the steps they can take? They might know about the health consequences, as well as the effect on the environment and global warming, but the public generally is unaware of the levels of air pollution in the city or town that they live. Of course, some countries are more high risk than others. Countries with high population densities in small areas are particularly at risk of considerable air pollution, as well as places with significant industrial activity. One way public health officials can fight air pollution is by creating policies worldwide that help create awareness of pollution contribution. People within a city or region should study different industries that have an effect on air pollution levels, including transportation, development, industrial efforts and energy. Step by step, executives and public representatives should create approaches to reduce air pollution in each sector. Discover trends Another way public health officials can fight to reduce air pollution is by looking for trends. Every country is different â€" some countries might have more air pollution from transportation, others might have air pollution from their industrial district. Over time, people can track these measures and learn where trends lie. Public health officials should also develop databases as they collect information on emission rates. As cities and regions begin to make steps toward reducing air pollution, it can be used as an example for other cities. However, if they had access to educational information, these disadvantaged countries might be able to learn from others and can create a similar model that will help reduce pollution rates. Push for alternate transportation One of the largest contributors to air pollution is transportation, especially in crowded cities. In urban areas, transportation is responsible for between 25 and 70 percent of all air pollution. Much of this is caused by individual drivers. However, public health officials need to implement policies and raise awareness about the benefits of public transportation as well as other alternate methods, such as riding bikes, walking or even taking hoverboards around urban areas. Carpooling is also a good way to reduce the carbon footprint. Discussing these preventative measures and educating citizens on the difference alternate transportation an make can help people take action.

Chapter 5 : 90% of world's children are breathing toxic air, WHO study finds | Environment | The Guardian

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

Messenger The developing world is in the midst of an environmental crisis. Simply breathing the air is a leading cause of death. Another showed that exposure to toxins or other dangerous substances in the air killed over 9 million people in alone, with 92 percent of those deaths occurring in developing countries â€" this is more people than were killed by AIDS, malaria and tuberculosis combined in that same year. In Latin America, over one-third of deaths from lung cancer, stroke and chronic obstructive pulmonary disease were estimated to stem from air pollution in There are many reasons behind these troubling trends, but one looms especially large: Not only has this created an environmental crisis in China itself , but the nature of its trade with developing nations threatens their air, water and soil as well. At the same time, air pollution has surged in many of these countries, especially in Africa. Are these two trends linked? My new study published in June tries to answer that question. The map shows the level of air pollution across the world based on annual mean emissions of microscopic atmospheric particulate matter. Green signals low levels of pollution while dark red reflects very high levels. World Health Organization The environmental cost of trade Most economists agree that trade helps generate economic growth and development. Unfortunately, these benefits often come with costs , such as environmental degradation. Developing countries are especially susceptible to this side effect because they often export pollution-intensive goods like fossil fuels and metals and have weak environmental regulations. Western governments have increasingly been pushing developing countries to protect their environments via trade agreements. A similar trend occurred in Europe, where binding environmental provisions became fixtures in trade agreements around In contrast, China does not push its partners to strengthen environmental protections. For this reason, trading intensively with China is especially likely to generate high levels of pollution in developing countries. I then conducted statistical tests to determine whether this measure of trade correlates to two relevant indicators of pollution: I also controlled for a series of other variables to isolate the relationship between trade and pollution. My findings show that pollution levels of many developing countries rose in tandem with trade to China â€" but not all of them. Those countries with high quality of governance, as measured by researchers at the Quality of Government Institute , did not experience heightened air pollution or environmental illness when they traded at high levels with China. In countries with strong governance, such as Chile, Gambia and Tanzania, which scored near the top of my sample, trading with China had little impact on sulfur dioxide emissions and environmental public health. On the other hand, trading intensively with China worsened the air quality in countries like the Democratic Republic of Congo, Liberia and Paraguay, which all ranked among the worst in governance. A big share of the trade developing countries tend to have with China is in fossil fuels, such as the coal that fires this power plant in Xuzhou, China. One is by finding ways to improve governance in the developing world. Governance quality encompasses bureaucracy, law and order and transparency. Countries with stronger bureaucracies can manage a multipronged policy agenda that promotes trade while protecting the environment. Governments capable of ensuring law and order are able to enforce environmental rules and regulations. Transparent institutions reduce opportunities for corruption that undermine efforts to protect the environment, such as bribery of public officials. At the same time, China could change its ways and do more to push for stronger environmental laws abroad. Western countries tend to do this already because of lobbying efforts by both environmentalists and producers that compete with Mexican firms, who fear being at a competitive disadvantage if developing countries have weak environmental laws. As wages continue to grow in China , the Chinese government will face similar pressures from domestic producers to do the same. It is perhaps telling that China recently signaled its interest in global environmental leadership.

Chapter 6 : Water pollution and the freshwater crisis | NSW Environment & Heritage

High levels of water pollution, in China and other places, further reduces the availability of supplies. Like air pollution, water pollution is also a common source of ill health, and can kill, the WHO attributes 2 million deaths a year to unsafe water, poor sanitation and hygiene.

Simply breathing the air is a leading cause of death. The dailyReport Must-reads from across Asia - directly to your inbox In Latin America, over one-third of deaths from lung cancer, stroke and chronic obstructive pulmonary disease were estimated to stem from air pollution in There are many reasons behind these troubling trends, but one looms especially large: Not only has this created an environmental crisis in China itself , but the nature of its trade with developing nations threatens their air, water and soil as well. At the same time, air pollution has surged in many of these countries, especially in Africa. Are these two trends linked? My new study published in June tries to answer that question. The map shows the level of air pollution across the world based on annual emissions of microscopic atmospheric particulate matter. Green signals low levels of pollution while dark red reflect very high levels. World Health Organization Most economists agree that trade helps generate economic growth and development. Unfortunately, these benefits often come with costs , such as environmental degradation. Developing countries are especially susceptible to this side effect because they often export pollution-intensive goods like fossil fuels and metals and have weak environmental regulations. Western governments have increasingly been pushing developing countries to protect their environments via trade agreements. NAFTA , for example, was the first United States trade agreement to include legally binding environmental conditions â€" something that is now a standard element. A similar trend occurred in Europe, where binding environmental provisions became fixtures in trade agreements around In contrast, China does not push its partners to strengthen environmental protections. Trade and pollution Against this backdrop, I investigated whether trade with China affected sulfur dioxide emissions and environmental illnesses in 58 Latin American and sub-Saharan African countries from to I then conducted statistical tests to determine whether this measure of trade correlates to two relevant indicators of pollution: I also controlled for a series of other variables to isolate the relationship between trade and pollution. My findings show that pollution levels of many developing countries rose in tandem with trade to China â€" but not all of them. Those countries with high quality of governance, as measured by researchers at the Quality of Government Institute , did not experience heightened air pollution or environmental illness when they traded at high levels with China. In countries with strong governance, such as Chile, Gambia and Tanzania, which scored near the top of my sample, trading with China had little impact on sulfur dioxide emissions and environmental public health. On the other hand, trading intensively with China worsened the air quality in countries like the Democratic Republic of Congo, Liberia and Paraguay, which all ranked among the worst in governance. One is by finding ways to improve governance in the developing world. Governance quality encompasses bureaucracy, law and order and transparency. Countries with stronger bureaucracies can manage a multipronged policy agenda that promotes trade while protecting the environment. Governments capable of ensuring law and order are able to enforce environmental rules and regulations. Transparent institutions reduce opportunities for corruption that undermine efforts to protect the environment, such as bribery of public officials. At the same time, China could change its ways and do more to push for stronger environmental laws abroad. Western countries tend to do this already because of lobbying efforts by both environmentalists and producers that compete with Mexican firms, who fear being at a competitive disadvantage if developing countries have weak environmental laws. As wages continue to grow in China , the Chinese government will face similar pressures from domestic producers to do the same. It is perhaps telling that China recently signaled its interest in global environmental leadership.

Chapter 7 : How to Battle the Air Pollution Crisis | UA

Pollution crisis is choking the Chinese economy The Asian colossus is losing percent of GDP to pollution-rated costs.

Background information Background information compiled from: Gluek, Island Press, Who Cares about the Environment? Environmental knowledge, skills, attitudes and behaviours in NSW: Earth is unique amongst planets of our solar system largely because of its abundant water - in oceans, in the atmosphere, in glaciers and as fresh water on land. Without water, life as we know it, could not exist. Even though water is abundant, the amount of potable fresh water available is a tiny fraction of the total amount of water in the world. The supply of fresh water is limited, vulnerable to human abuse and not evenly distributed in both time and space. Fresh water resources around the world have been overused, polluted, fought over and squandered with little regard for human health and ecological consequences. Polluted stormwater is a major contributor to the degradation of fresh water. NSW Water Situation Australia is the driest continent and has the most variable rainfall and stream flow in the world. The effective management of water resources is a major environmental challenge because of: Global water consumption rose six-fold between and , more than double the rate of population growth. In wealthy urban communities, an abundance of irrigated gardens and household appliances is responsible for an increase in household water consumption. Population growth will cause a rapid increase in agricultural demand for water. Globally, water supplies are unevenly distributed. Some countries experience an abundant water supply. Other countries experience severe water shortages. In some areas, such as India and Africa, water withdrawals are so high that surface water supplies are shrinking and groundwater supplies are being depleted faster than they can be replenished. Moderate water stress levels are said to occur when water consumption exceeds renewable freshwater supply by 10 per cent. The problems are most severe in Africa and West Asia. The UN expects the global water situation to get considerably worse over the next 30 years. Water pollution adds enormously to existing problems of water scarcity by contaminating large volumes of available water, thus making it unsuitable for use. This situation is worst in third world countries, where human health is gravely damaged by accelerating contamination of water supplies by eutrophication , heavy metals , persistent organic pollutants , acidification and sewage pollution. Water Consumption In rich countries, people use between and 1, litres of water each day. In poor areas where people rely on public taps for their water, consumption drops to between 20 and 70 litres each per day. Where there are no taps at all and people usually women have to travel to collect water, daily consumption often drops to between 2 and 5 litres. This is close to the absolute biological minimum people need to stay alive. Global Water Crisis The dawning of the 21st Century brings with it a global water crisis. If we continue business as usual increasing population, water usage, pollution and wastage it is estimated that by the year the global water demand for freshwater will exceed the supply.

Chapter 8 : Water Pollution | The World in Crisis

From Not Enough to Too Much, the World's Water Crisis Explained Many more cities than Cape Town face an uncertain future over water. But there are emerging solutions.

These natural resources are in limited supply. While they do occur naturally, it can take hundreds of thousands of years to replenish the stores. Governments and concerned individuals are working to make the use of renewable resources a priority, and to lessen the irresponsible use of natural supplies through increased conservation. The energy crisis is a broad and complex topic. The energy crisis is something that is ongoing and getting worse, despite many efforts. The reason for this is that there is not a broad understanding of the complex causes and solutions for the energy crisis that will allow for an effort to happen that will resolve it. In popular literature though, it often refers to one of the energy sources used at a certain time and place, particularly those that supply national electricity grids or serve as fuel for vehicles. One side will always say it is based on faulty science and politics; the other will say that the other side is basing their findings on junk science and political interests. The best way to sum up the reality of the energy crisis is that you cannot have growing demands on limited resources without eventually running out of the resource. That is just common sense. What is really at play in the discussion about how real the energy crisis is concerns the perception of responsibility for the future. There is no real energy crisis if you are not concerned about life after your time on Earth is gone. There is a very real energy crisis if you care about the future that the next generations will inherit. Causes of the Energy Crisis It would be easy to point a finger at one practice or industry and lay the blame for the entire energy crisis at their door, but that would be a very naive and unrealistic interpretation of the cause of the crisis. The energy crisis is a result of many different strains on our natural resources, not just one. There is a strain on fossil fuels such as oil , gas and coal due to overconsumption â€” which then in turn can put a strain on our water and oxygen resources by causing pollution. No matter what type of food or products you choose to use â€” from fair trade and organic to those made from petroleum products in a sweatshop â€” not one of them is made or transported without a significant drain on our energy resources. Aging infrastructure of power generating equipment is yet another reason for energy shortage. Most of the energy producing firms keep on using outdated equipment that restricts the production of energy. It is the responsibility of utilities to keep on upgrading the infrastructure and set a high standard of performance. Unexplored Renewable Energy Options: Renewable energy still remains unused is most of the countries. Most of the energy comes from non-renewable sources like coal. It still remains the top choice to produce energy. Unless we give renewable energy a serious thought, the problem of energy crisis cannot be solved. Renewable energy sources can reduce our dependance on fossil fuels and also helps to reduce greenhouse gas emissions. Delay in Commissioning of Power Plants: In few countries, there is a significant delay in commissioning of new power plants that can fill the gap between demand and supply of energy. The result is that old plants come under huge stress to meet the daily demand for power. In most parts of the world, people do not realize the importance of conserving energy. It is only limited to books, internet, newspaper ads, lip service and seminars. Unless we give it a serious thought, things are not going to change anytime sooner. Simple things like switching off fans and lights when not in use, using maximum daylight, walking instead of driving for short distances, using CFL instead of traditional bulbs, proper insulation for leakage of energy can go a long way in saving energy. Read here about ways of saving energy. Frequent tripping and breakdown are result of a poor distribution system. Major Accidents and Natural Calamities: Major accidents like pipeline burst and natural calamities like eruption of volcanoes, floods, earthquakes can also cause interruptions to energy supplies. The huge gap between supply and demand of energy can raise the price of essential items which can give rise to inflation. Tax hikes, strikes, military coup, political events, severe hot summers or cold winters can cause sudden increase in demand of energy and can choke supply. A strike by unions in an oil producing firm can definitely cause an energy crisis. Possible Solutions of the Energy Crisis Many of the possible solutions are already in place today, but they have not been widely adopted. Move Towards Renewable Resources: Much of the industrial age was created using fossil fuels, but there is also known technology that uses other

types of renewable energies â€” such as steam, solar and wind. Buy Energy Efficient products: They use less watts of electricity and last longer. There are a number of new technologies out there that make lighting controls that much more interesting and they help to save a lot of energy and cash in the long run. Preset lighting controls, slide lighting, touch dimmers, integrated lighting controls are few of the lighting controls that can help to conserve energy and reduce overall lighting costs. People who use different options to generate power must be given permission to plug into the grid and getting credit for power you feed into it. The hassles of getting credit of supplying surplus power back into the grid should be removed. Apart from that, subsidy on solar panels should be given to encourage more people to explore renewable options. Energy simulation software can be used by big corporates and corporations to redesign building unit and reduce running business energy cost. Engineers, architects and designers could use this design to come with most energy efficient building and reduce carbon footprint. Energy audit is a process that helps you to identify the areas where your home or office is losing energy and what steps you can take to improve energy efficiency. Energy audit when done by a professional can help you to reduce your carbon footprint, save energy and money and avoid energy crisis. Common Stand on Climate Change: Both developed and developing countries should adopt a common stand on climate change. They should focus on reducing greenhouse gas emissions through an effective cross border mechanism. With current population growth and over consumption of resources, the consequences of global warming and climate change cannot be ruled out. Both developed and developing countries must focus on emissions cuts to cut their emission levels to half from current levels by What is Being Done Today? There are many global initiatives that are working towards resolving the energy crisis. This has taken the form of increased regulation and restriction on carbon emissions, the promotion of greener manufacturing and construction projects, the funding of research into hybrid technologies and more sustainable technologies and more. Locally, more communities are seeing beyond the recycle bin and recognizing that how the community uses their local resources is important too.

Chapter 9 : Is China fueling the developing world's environmental crisis? | Asia Times

Mark Watts, executive director of the C40 Cities group, which represents cities around the world working to tackle the climate crisis and air pollution, said the report was an urgent call to action.