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ENVIRONMENTAL POLLUTION: ITS EFFECTS ON HUMAN AND NATURE

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Introduction

The significance of environmental factors to the health and well-being of human populations' is increasingly apparent (Rosenstock 2003; World Health Organization [WHO], 2010b). Environment pollution is a worldwide problem and its potential to influence the health of human populations is great (Fereidoun et al, 2007; Progressive Insurance, 2005.). Pollution reaches its most serious proportions in the densely settled urban-industrial centers of the more developed countries (Kromm, 1973). In poor countries of the world more than 80% polluted water have been used for irrigation with only seventy to eighty percent food and living security in industrial urban and semi urban areas. (Mara & Cairncross, 1989). Industry, clustered in urban and semi-urban areas surrounded by densely populated, low-income localities, continues to pollute the environment with impunity (Government of Pakistan, 2009). Over the last three decades there has been increasing global concern over the public health impacts attributed to environmental pollution (Kimani, 2007), Human exposure to pollution is believed to be more intense now than at any other time in human existence (Schell et al, 2006). Pollution can be made by human activity and by natural forces as well (Fereidoun et al, 2007; The Encyclopedia of the Atmospheric Environment, n.d). Selfish private enterprise and their lack of awareness of public well-being and social costs (Carter, 1985) and natural disasters (Huppart & Sparks, 2006) e.g. volcanic ash from Iceland (World Health Organization [WHO], 2010a) are the one of the main reason of pollution. British Airways (1993) expresses their concern about environment in their general goal 'to be a good neighbor, concerned for the community and the environment. This implies that, businesses now adopted this responsibility as part of their overall business strategy; which should match their broader business goals (Pearce, 1991).

Methodology :-

The present research paper is based on secondary data. Which is collected from the books, Journals, news paper, websites, Internet, etc.

Objective:-

To study the nature and effect of environmental pollution.

Environmental Pollution:-

Environmental pollution refers to any physical, chemical or biological alternative in the quality of air, water or soil to a degree that is harmful to living organisms. The agents that produce the state of pollution are called pollutants. The most appropriate definition of environmental pollution would be the introduction of different harmful pollutants into certain environment that make this environment unhealthy to live in. The most common pollutants are usually chemicals, garbage, and waste water. Environmental pollution is happening in many parts of the world, especially in form of air and water pollution. one of the greatest problems that the world is facing today is that of environmental pollution, increasing with every passing year and causing grave and irreparable damage to the earth. Over the last three decades there has been increasing global concern over the public health impacts attributed to environmental pollution, in particular, the global burden of disease. The World Health Organization (WHO) estimates that about a quarter of the diseases facing mankind today occur due to prolonged exposure to environmental pollution. Most of these environment-related diseases are however not easily detected and may be acquired during childhood and manifested later in adulthood. Pollution of the environment is causing great damage to ecosystem that depend upon the health of this environment. Air and water pollution can cause death of many organisms in given ecosystem, including humans. Water pollution according to some estimates cause 14.000 deaths each day in the world, most of them in India. This is really no surprise when you look at the data that says that 700 million Indians do not even have access to a proper toilet, whether alone clean water. The environmental imbalance gives rise to various environmental problems. Some of the environmental problems are pollution, soil erosion leading to floods, salt deserts and sea recedes, desertification, landslides, change of river directions, extinction of species, and vulnerable ecosystem in place of more complex and stable ecosystems, depletion of natural resources, waste accumulation, deforestation, thinning of ozone layer and global warming. The environmental problems are visualized in terms of pollution, growth in population, development, industrialization, unplanned urbanization etc. Rapid migration and increase in population in the urban areas has also

lead to traffic congestion, water shortages, solid waste, and air, water and noise pollution are common noticeable problems in almost all the urban areas since last few years.

Air Pollution:-

India's ongoing population explosion has placed great strain on the country's environment. Between 1951 and 1991, the urban population has tripled, from 62.4 million to 217.6 million India has more than 20 cities with populations of at least 1 million, and some of them -including New Delhi, Mumbai, Chennai, and Kolkata- are among the world's most polluted. The rapid increase in urban population has resulted in unplanned urban development, increase in consumption patterns and higher demands for transport, energy, and other infrastructure, therefore leading to pollution problems (India: State of the Environment, 2001).

Vehicles are the major source of this pollution, with more than three million cars, trucks, buses, taxis, and rickshaws already on the roads. The number of motor vehicles in India has increased from 0.3 million in 1951 to 37.2 million in 1997 with 23% being concentrated in the metropolitan cities (MoST, 2000). With vehicle ownership rising along with population and income, India's efforts to improve urban air quality have focused in this area.

Another key factor contributing to the poor air quality has been the increase in industrial activity. India has made rapid strides in industrialization, and is one of the top ten most industrialized nations of the world. This status has brought about unplanned and unwanted consequences to the environment. According to the Central Pollution Control Board they have identified seventeen categories of industries in India that significantly pollute the air. Small-scale industries play a role in the air pollution as well. They have over three million small-scale units that account for 40% of the total industrial output in the country (Kuntz, Garner, 2006).

Water pollution:-

Water covers two-thirds of the Earth's surface, with over 97% present in the oceans and less than 1% in freshwater streams and lakes. Water is also present in the atmosphere in solid form in the polar icecaps and as groundwater in aquifers (water-bearing rocks) deep underground. Water has many remarkable properties. It is sometimes referred to as 'the universal solvent', readily dissolving a wide range of chemical substances. It also acts as a fluid medium facilitating the dispersal of un-dissolved particulate matter. The water we drink are essential ingredients for our wellbeing and a healthy life. Unfortunately polluted water and air are common throughout the world (European Public Health Alliance, 2009). The WHO states that one sixth of the world's population, approximately 1.1 billion people do not have access to safe water and 2.4 billion lack basic sanitation (European Public Health Alliance, 2009).

Water pollution may be defined as any chemical or physical change in water detrimental to living organisms. It can occur through natural processes, for example by sediments produced by natural erosion. Water bodies are a major recipient of an extensive array of wastes produced by human activity. These may be discharged directly into watercourses by sewers or pipes from factories or be washed down from agricultural or urban areas particularly after heavy rains. Under rather exceptional circumstances, water bodies may become significantly contaminated by the atmospheric deposition of pollutants. Water pollution means one or more substances have built up in water such as extent that they cause problems for animals or peoples. Oceans, lakes, rivers, & other inland waters can naturally clean up a certain amount of pollution by dispersing it harmless. Oceans, lakes & rivers like these water resources are called surface water. The most obvious type of water pollution affects surface water. Ground water and surface water are two types of water resources that pollution affects. Pollution control standards & regulations usually distinguish between point & nonpoint pollution sources. Point sources: discharge pollution from specific location e.g. drain pipes, ditches or sewer out outfalls. Non point sources: Pollution is scattered or diffuse, having no specific location where they discharges in to a particulars body of water (e.g. runoff from farm fields & feedlots, golf courses, lawns & gardens). Water pollution is a major global problem which requires ongoing evaluation & revision of water resource policy at all levels, It has been suggested that it is the leading worldwide causes of death & diseases & that it accounts for the death of more than 14,000 people daily. An estimated 700 million Indians have no access to a proper toilet & 1,000 Indian children die of diarrheal sickness every day.

Land/Solid Waste Pollution :-

Unplanned disposal of domestic or household garbage is a major source of pollution in urban areas. The increased economic growth of a place is reflected in the kind of waste it generates. Earlier the type of waste used to be mainly organic wastes which are biodegradable, for example, leftover food, peels of vegetables or fruits, paper, etc. today not only has the quantity of waste changed but the composition of the waste, from being mainly reusable to disposable. These wastes mainly comprise plastics, fused materials (in which more than one material – plastic and paper, or paper and aluminum, are joined or fused together, e.g. pan masala pouches, tetra packs), toxic material, etc., these wastes are not biodegradable and remain on the land for a long time. They could contaminate air, water and land with toxins.

On an average 0.3 to 0.5 kg of solid waste is generated by a single individual in an urban area. The quantity of waste generated in a day varies from city to city. In many cities the solid waste disposal is inefficient or non-existing. Even more problematic than household wastes are the industrial, hospital and institutional wastes, which often contains hazardous and toxic chemicals, not to mention viruses and bacteria. These chemicals need special care when changing, storing, transposing and disposing them. Still they are allowed to go directly the water bodies from where they can contaminate the whole water cycle. The disposal of the solid wastes is often similar than with the liquid ones. They end up to the illegal dump on streets, open spaces, wastelands, drains or rivers. Sometimes they are collected to the land sites but the protection of water bodies and groundwater is not active (HABITAT 1996, Ogu 2000).

Noise Pollution:-

The increasing number of vehicles on the road, proliferation of small-scale industries within the city, use of loudspeakers at religious, public and social events, are some factors resulting in the increasing noise levels of the city. Sound intensity is measured in terms of the unit decibel (db). On this scale each 10 db rise indicates a ten-fold increase in sound pressure. Thus the rise in sound intensity on the ear from 1 db to 20 db represents a hundred-fold increase in sound level. The noise levels in some of India's major cities vary from 60 to 90 db. Continuous exposure to high levels of noise leads to both mental and physical health problems among people. Some of the effects are irritability, aggression, rise in blood pressure, headache, insomnia, permanent hearing loss, etc.

Effects of Polluted Environment on Human and Nature:-

Water becomes contaminated when it comes in contact with toxic pathogens and chemicals. The most common type of water contamination is through human and animal feces. Some countries, such as the United States have the means to safely dispose of these types of pathogens, however other countries, such as China and India are not able to properly dispose of the feces in a safe manner. As a result, the feces enter the water supply and spread through the population through person-to-person contact. Infections caused by pathogens are diarrheal diseases such as E. coli, giardia and the typhoid fever. Some populations are more susceptible to water-contamination diseases more than other populations. For example, children and infants are vulnerable to pathogen related diseases because their immune systems are not fully developed and strong enough to fight off the toxic contaminants and the resulting infections. Statistics show that more than 2 million children die from diarrheal diseases each year with 90% of these children being under 5 years of age. Other populations that are prone to diarrheal diseases include cancer patients, HIV/AIDS patients, transplant patients, the elderly, and pregnant women (including their unborn child). Human infectious diseases are among the most serious effects of water pollution. Polluted water is the main cause of a number of diseases. Polluted water not only affects the life of present generation but it also affects the life of upcoming generations because its effect remains for long. The survival of human being is not possible without the water. Human being cannot live without the water. For a healthy life pure and pollution free water is indispensable. If in any area the water is polluted then people or the other living creatures are forced to drink that polluted water because they have no other option nor can they live without it.

The main factors of land pollution are increasing rate of soil erosion caused due to deforestation. Natural factors of soil erosion (like rainfall, wind, topography etc.) are further increased by human activities. In most of the developing countries increasing rate of soil erosion due to deforestation and faulty agricultural practices has degraded land to a large scale because the fertile top soil has been washed out. The disposal of industrial solid wastes is the major source of soil pollution by toxic chemicals. The radioactive wastes produced by nuclear power plants are harmful to soil as well as for plant growth. Land pollution results in substantial decrease in soil fertility and agricultural production. Chemical pollutants in the form of chemical fertilizers and pesticides, insecticides and herbicides cause various diseases and several deaths. Those bacteria which are transmitted from man to soil infect man causing dysentery, cholera, tuberculosis, typhoid and paratyphoid fever etc. The decomposition of various waste materials causes harmful gases and bad smell. Clogging of micro-holes of the soil by particles in the sewage destroy the soil micro-organisms. Land pollution is one of the main causes of air and water pollution.

The immediate and acute effect of noise pollution to a person, over a period of time, is impairment of hearing. Prolonged exposure to impulsive noise to person will damage their impairment, which may result in a permanent hearing. Environmental pollutants have various adverse health effects from early life some of the most important harmful effects are perinatal disorders, infant mortality, respiratory disorders, allergy, malignancies, cardiovascular disorders, increase in stress oxidative, endothelial dysfunction, mental disorders, and various other harmful effects . Though, short-term effects of environmental pollutants are usually highlighted, wide range of hazards of air pollution from early life and their possible implication on chronic non-communicable diseases of adulthood should be underscored. Numerous studies have exposed that environmental particulate exposure has been linked to increased risk of morbidity and mortality from many diseases, organ disturbances, cancers, and other chronic diseases . Therefore it is time to take action and control the pollution. Otherwise, the waste products from consumption, heating, agriculture, mining, manufacturing, transportation, and other human activities will degrade the environment.

Conservation and protection of environment:-

By now, all of us have realized how important it is to protect the environment for our own survival. The term 'conservation' of environment relates to activities which can provide individual or commercial benefits, but at the same time, prevent excessive use leading to environmental damage. Conservation may be distinguished from preservation, which is considered to be "maintaining of nature as it is, or might have been before the intervention of either human beings or natural forces." We know that natural resources are getting depleted and environmental problems are increasing. It is, therefore, necessary to conserve and protect our environment. Following practices help in protecting our environment.

1. Rotation of crops.
2. Judicious use of fertilizers, intensive cropping, proper drainage and irrigation.
3. Treatment of sewage, so that it does not pollute the rivers and other water bodies.
4. Composting organic solid waste for use as manure.
5. Planting trees in place of those removed for various purposes.
6. National parks and conservation forests should be established by the government.
7. Harvesting of rain water.

Some action points to protect or improve the environment: -

1. Dispose the waste after separating them into biodegradable and non-biodegradable waste material.
2. Start a compost heap or use a compost bin. This can be used to recycle waste food and other biodegradable materials.
3. Avoid unnecessary or wasteful packaging of products.
4. Reuse carry bags.
5. Plant trees. They will help to absorb excess carbon dioxide.
6. Never put any left over chemicals, used oils down the drain, toilet or dump them on the ground or in water or burn them in the garden. If you do so, it will cause pollution.
7. Don't burn any waste, especially plastics, for the smoke may contain polluting gases.
8. Use unleaded petrol and alternate sources of energy, and keep the engine properly tuned and serviced and the tyres inflated to the right pressure, so that vehicle runs efficiently.
9. Avoid fast starts and sudden braking of automobiles.
10. Walk or cycle where it is safe to do so – walking is free; cycling can help to keep you fit.
11. Use public transport wherever you can, or form a car pool for everyday travel.
12. Send your waste oil, old batteries and used tyres to a garage for recycling or safe disposal; all these can cause serious pollution.

Conclusion:

India still faces significant challenges in balancing its increased demand for energy with the need to protect its environment from further damage. rapid population growth and urbanization make the task all the more difficult for the Indian government, as increased vehicle ownership is contributing to the existing air pollution problems while urbanization raises the health risks from that pollution. . The Indian government's ability to safeguard the country's environment will depend on its success in promoting policies that keep the economy growing while providing adequate energy needs to satisfy the populace's growing energy consumption requirements in a sustainable manner.

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