
ENVIRONMENTAL POLLUTION AND ITS IMPACT ON HUMAN HEALTH

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Abstract: Environment pollution is a wide-reaching problem and it is likely to influence the health of human populations is great. This paper provides the insight view about the effects of environment pollution in the perspective of air pollution, water and land/ soil waste pollution on human by diseases and problems, animals and trees/ plants. Study finds that these kinds of pollutions are not only seriously affecting the human by diseases and problems but also the animals and trees/ plants.

Keywords: Environment Pollution; Air Pollution; Water Pollution; Soil Pollution; Land Pollution; Remedies

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 (Huppert & 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).

Air Pollution: The air we breathe is an essential ingredient for our wellbeing and a healthy life. Unfortunately polluted air is common throughout the world (EPA, 2009) specially in developed countries from 1960s. (Kan, 2009). South of Poland (Krzeslak & Korytkowski, 1994), Ukraine (Avdeev & Korchagin,

1994), China (Kan, 2009), and Pakistan (Government of Pakistan, 2009; Khan, 2010) even famous crowded cities and countries are facing air pollution. Polluted air contains one, or more, hazardous substance, pollutant, or contaminant that creates a hazard to general health (Health and Energy, 2007). The main pollutants found in the air we breathe include, particulate matter, PAHs, lead, ground-level ozone, heavy metals, sulphur dioxide, benzene, carbon monoxide, and nitrogen dioxide (European Public Health Alliance, 2009). Air pollution in cities causes a shorter lifespan for city dwellers (Progressive Insurance, 2005). Holland et al, (1979) illustrated that British scientists concluded that particulate and related air pollution at high levels pose hazards to human health. According to Mishra (2003) rapid growth in urban population, increasing industrialization, and rising demands for energy and motor vehicles are the worsening air pollution levels. He added other factors, such as poor environmental regulation, less efficient technology of production, congested roads, and age and poor maintenance of vehicles, also add to the problem. He further added that air pollution is caused of ill health and death by natural and man-made sources, major man-made sources of ambient air pollution include tobacco smoke, combustion of solid fuels for cooking, heating, home cleaning agents, insecticides industries, automobiles, power generation, poor environmental regulation, less efficient technology of production, congested roads, and age and poor maintenance of vehicles. The natural sources include incinerators and waste disposals, forest and agricultural fires (European Public Health Alliance, 2009).

Water pollution: 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). Polluted water consists of Industrial discharged effluents, sewage water, rainwater

pollution (Ashraf et al, 2010) and polluted by agriculture or households cause damage to human health or the environment. (European Public Health Alliance, 2009). This water pollution affects the health and quality of soils and vegetation (Carter, 1985). Some water pollution effects are recognized immediately, whereas others do not show up for months or years (Ashraf et al, 2010). Estimation indicates that more than fifty countries of the world with an area of twenty million hectares area are treated with polluted or partially treated polluted water (Hussain et al, 2001) including parts of all continents (Avdeev & Korchagin, 1994; Carter, 1985; Kan, 2009; Khan, 2010; Krześlak & Korytkowski, 1994; Wu et al, 1999) and this poor quality water causes health hazard and death of human being, aquatic life and also disturbs the production of different crops (Ashraf et al, 2010; Scipeeps, 2009). In fact, the effects of water pollution are said to be the leading cause of death for humans across the globe, moreover, water pollution affects our oceans, lakes, rivers, and drinking water, making it a widespread and global concern (Scipeeps, 2009). A drinking water contained a fluoride content ranging from 5.26 to 26.32 milligrams per liter and this is too high as compared to the World Health Organization's standard of 0.6 to 1.7 milligram per liter (Rizvi, 2000). According to Ashraf et al (2010), In present scenario due to industrialization and increased population, the drains of Pakistan carry the industrial and municipal effluents that are ultimately carried that polluted water to the canals and rivers. The untreated industrial and municipal wastes have created multiple environmental hazards for mankind, irrigation, drinking, and sustenance of aquatic life. The drainage water contains heavy metals in addition to biological contaminations. This water pollution infected our food in addition to groundwater contamination when used to irrigate crops. Pakistani cities are facing tribulations of urban congestion, deteriorating air and water quality and waste management while the rural areas are witnessing rapid deforestation, biodiversity and habitat loss, crop failure, desertification, land degradation, clean drinking water, noise pollution, sanitation (Government of Pakistan, 2009).

Land/ Solid waste Pollution: Improper management of solid waste is one of the main causes of environmental pollution (Kimani, 2007). Land pollution is one of the major forms of environmental catastrophe our world is facing today (Khan, 2004). As Bulgaria and the Slovak Republic, heavy metal industries have produced wastes that are deposited into landfills without special precautions (Lenkova & Vargova, 1994; Spassov, 1994). Cucu et al (1994) posit that approximately half of the population lives in the vicinity of waste sites that do not conform to

contemporary standards in Romania. Czech Republic's coal and uranium mines have produced serious pollution problems, and much of the solid industrial waste containing heavy metals is disposed of, without pretreatment, in open dumps (Rushbrook, 1994). Harvath & Hegedus (1994) concluded as the worst pollution of Hungary comes from open cast mines, lignite-based power plants, chemical factories, and the aluminum industry. The Silesia district in the south of Poland has severe contamination from mining and industry (Krześlak & Korytkowski, 1994). Avdeev & Korchagin (1994) conceived soil pollution is critical issues in Ukraine. World Bank (2002) found Particulate matter is the most serious pollutant in large cities in South Asia.

Effects Of Dying Environment On Human, Animals, And Plants: Environment dying is global perilous point which catastrophically the human, animals and plants. Air pollution results are Cancer (Ries et al. 1999; European Public Health Alliance, 2009), neurobehavioral disorders (Blaxill 2004; Landrigan et al. 2002; Mendola et al. 2002; Schettler 2002; Stein et al. 2002), cardiovascular problems (European Public Health Alliance, 2009; Tillett, 2009), reduced energy levels (Colls, 2002), premature death (European Public Health Alliance, 2009), asthma (Brauer et al, 2007; Gehring et al, 2002; Jacquemin et al, 2009; Mannino et al. 1998; McConnell et al, 2006; Modig et al, 2006), asthma exacerbations (D'Amato et al, 2005; Heinrich & Wichmann, 2004; Künzli et al, 2000; Nel, 2005;), headaches and dizziness (Colls, 2002), irritation of eyes, nose, mouth and throat (Colls, 2002), reduced lung functioning (Colls, 2002; Gauderman et al, 2005), respiratory symptoms (Colls, 2002; Vichit-Vadakan, 2001), respiratory disease (European Public Health Alliance, 2009; Firkat, 1931), disruption of endocrine (Colls, 2002; Crisp et al, 1998) and reproductive and immune systems (Colls, 2002; European Public Health Alliance, 2009). London Fog episode of 1952, where a sharp increase in particulate matter air pollution led to increased mortality among infants and older adults (Woodruff et al, 2006). High air pollution levels have been linked to infant mortality. (Fereidoun et al, 2007). Air pollutants can also indirectly affect human health through acid rain, by polluting drinking water and entering the food chain, and through global warming, associated climate change, and sea level rise. (Mishra, 2003). Associations between particulate air pollution and respiratory disease are reported in Meuse Valley, Belgium, in December 20, 2016 1930 (Firkat, 1931), an episode in Donora, Pennsylvania, in 1948 (Ciocco & Thompson, 1961) and the most notable occurring in December 1952 (Logan, 1953). According to Gardiner (2006) acid rain destroys fish life in lakes and streams and kill trees, destroy the leaves of plants, can

permeate soil by making it inappropriate for reasons of nutrition and habitation, unwarranted ultraviolet radiation through the ozone layer eroded by some air pollutants, may cause skin cancer in wildlife and damage to trees and plants, and Ozone in the lower atmosphere may damage lung tissues of animals and can prevent plant respiration by blocking stomata (openings in leaves) and negatively affecting plants' photosynthesis rates which will stunt plant growth; ozone can also decay plant cells directly by entering stomata. Polluted drinking water or water polluted by chemicals produced waterborne diseases like, Giardiasis, Amoebiasis, Hookworm, Ascariasis, Typhoid, Liver and kidney damage, Alzheimer's disease, non-Hodgkin's Lymphoma, multiple Sclerosis, Hormonal problems that can disorder development and reproductive processes, Cancer, heart disease, damage to the nervous system, different type of damages on babies in womb, Parkinson's disease, Damage to the DNA and even death, meanwhile, polluted beach water contaminated people like stomach aches, encephalitis, Hepatitis, diarrhea, vomiting, gastroenteritis, respiratory infections, ear ache, pink eye and rashes (Water Pollution Effects, 2006). Loss of wild life is directly related to pollution (Progressive Insurance, 2005). More sodium chloride (ordinary salt) in water may kill animals and plants, plants may be killed by mud from construction sites as well as bits of wood and leaves, clay and other similar materials and plants may be killed by herbicides in water (Kopaska-Merkel, 2000). For tree and plants water, pollution may disrupt photosynthesis in aquatic plants and thus affecting ecosystems that depend on these plants (Forestry Nepal, n.d). Soil pollution effects causes according to tutor vista (n.d)

are cancer including leukemia and it is danger for young children as it can cause developmental damage to the brain furthermore it illustrated that mercury in soil increases the risk of neuromuscular blockage, causes headaches, kidney failure, depression of the central nervous system, eye irritation and skin rash, nausea and fatigue. Soil pollution closely associated to air and water pollution, so its numerous effects come out as similar as caused by water and air contamination.

Conclusion: It appears that polluted environment is global an issue and world community would bear worst results more as they already faced. As effective response to pollution is largely based on human appraisal of the problem (Kromm, 1973) and pollution control program evolves as a nationwide fixed cost-sharing effort relying upon voluntary participation (Sharp & Bromley, 1979). Education, research, and advocacy, are lacking in the region as preventive strategy for pollution (Fitzgerald, 1998) especially in Asia. At present the adoption of environmental auditing in any economic sector is voluntary but future legislation could well make it mandatory (Goodall, 1995) and still time available to use technology and information for environmental health decision. Policymakers in developing countries need to design programs, set standards, and take action to mitigate adverse health effects of air pollution. Healthy people mean human resources are the main object of any successful business or country. These societal beneficial efforts need to carefully adapt available knowledge from other settings, keeping in mind the differences in pollutant mixtures, concentration levels, exposure patterns, and various underlying population characteristics.

References:

1. Carter, F. W. (1985). Pollution Problems in Post-War Czechoslovakia, *Transactions of the Institute of British Geographers*, 10(1), pp. 17-44.
2. Harvath, A. & Hegedus, E. (1994). Hazardous Wastes in Hungary-National Report, *Central European Journal of Public Health*, 2 (suppl), pp. 30-33.
3. Kan, H. (2009). Environment and Health in China: Challenges and Opportunities *Environmental Health Perspectives*, 117(12), pp. A530-A531
4. Khan, S. I. (2004). Dumping of Solid Waste: A Threat to Environment, *The Dawn*, Retrieved from <http://66.219.30.210/weekly/science/archive/040214/science13.htm>
5. Kromm, D. E. (1973). Response to Air Pollution in Ljubljana, Yugoslavia, *Annals of the Association of American Geographers*, 63(2), pp. 208-217.
6. Krześlak, A. & Korytkowski, J. (1994). Hazardous Wastes in Poland-National Report, *Central European Journal of Public Health*, 2(suppl), and pp. 44-40.
7. Lenkova, K. & Vargova, M. (1994). Hazardous Wastes in the Slovak Republic-National Report, *Central European Journal of Public Health*, 2(suppl), pp. 43-48.
8. Sharp, B. M. H. & Bromley, D. W. (1979). Agricultural Pollution: The Economics of Coordination, *American Journal of Agricultural Economics* 61(4), pp. 591-600.
9. Stein, J., Schettler, T., Wallinga, D. & Valenti, M. (2002). In Harm's Way: Toxic Threats to Child Development, *Journal of Developmental & Behavioral Pediatrics*, 23(0), pp. S 13-S 22.
10. Tutor vista, (n.d). Consequences of Soil Pollution, Retrieved from

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- <http://www.tutorvista.com/english/consequences-of-soil-pollution>
11. Water Pollution Effects, (2006). In Grinning Planet, Saving the Planet One Joke at a Time. Retrieved from <http://www.grinningplanet.com/2006/12-05/water-pollution-effects.htm>
 12. World Bank, (2002). What Do We Know About Air Pollution?—India Case Study, Urban Air Pollution, South Asia Urban Air Quality Management Briefing Note No. 4, pp. 1-4.
 13. World Health Organization (WHO), (2010b). The World Health Report - Health Systems Financing: The Path to Universal Coverage. Retrieved from
 14. Wu, C., Maurer, C., Wang, Y., Xue, S. & Davis, D. L. (1999). Water Pollution and Human Health in China, Environmental Health Perspectives, 107(4), pp. 251-256.

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