

Role of Education to Control the Environmental Pollutions

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Abstract: *Developmental activities such as construction, transportation and manufacturing not only deplete the natural resources but also produce large amount of wastes that leads to pollution of air, water, soil, and oceans; global warming and acid rains. Untreated or improperly treated waste is a major cause of pollution of rivers and environmental degradation causing gill health and loss of crop productivity. Environment pollution is a wide-reaching problem and it is likely to influence the health of human populations is great. According to author, still time left in the hands of global institutions, governments and local bodies to use the advance resources to balance the environment for living and initiates the breathed intellectuals to live friendly with environment. As effective reply to contamination is largely based on human appraisal of the problem from every age group and contamination control program evolves as a nationwide fixed cost-sharing effort relying upon voluntary participation (Sharp & Bromley, 1979). Environmental education is important to trigger proactive participation of the masses in addressing, debating and protesting on significant environmental issues. The goal of environmental education is to develop a world population that is aware of and concerned about the environment and its associated problems and who has the knowledge, skills, attitudes, motivations and commitment to work individually and collectively towards solution of current environmental problems and prevention of new ones. School system provides the largest organized base for environmental education and action.*

Keywords : pollution of air, water, soil, and oceans; global warming

Introduction:

Human activities directly or indirectly affect the environment adversely. A stone crusher adds a lot of suspended particulate matter and noise into the atmosphere. Automobiles emit from their tail pipes oxides of nitrogen, sulphur dioxide, carbon dioxide, carbon monoxide and a complex mixture of un-burnt hydrocarbons and black soot which pollute the atmosphere. Domestic sewage and run off from agricultural fields, and fertilizers, pollute water bodies. Effluents from tanneries contain many harmful chemicals and emit foul smell. These are only a few examples which show how human activities pollute the environment. Pollution may be defined as addition of undesirable material into the environment as a result of human activities. The agents which cause environmental pollution are called pollutants. A pollutant may be defined as a physical, chemical or biological substance unintentionally released into the environment which is directly or indirectly harmful to humans and other living organisms.

Types of Pollution

Pollution may be of the following types:

(1) Air pollution. (2) Noise pollution. (3) Water pollution. (4) Soil pollution. (5) Thermal pollution. (6) Radiation pollution.

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 (EPHA, 2009) especially 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 mater, 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.

Noise Pollution

It is one of the most pervasive pollutants. A musical clock may be nice to listen during the day, but may be an irritant during sleep at night. Noise by definition is "sound without value" or "any noise that is unwanted by the recipient". Noise in industries such as stonecutting and crushing, steel forgings, loudspeakers, shouting by hawkers selling their wares, movement of heavy transport vehicles, railways and airports leads to irritation and an increased blood pressure, loss of temper, decrease in work efficiency, loss of hearing which may be first temporary but can become permanent in the noise stress continues. It is therefore of utmost importance that excessive noise is controlled. Noise level is measured in terms of decibels (dB). W.H.O. (World Health Organization) has prescribed optimum noise level as 45 dB by day and 35 dB by night. Anything above 80 dB is hazardous. The table 10.4 gives the noise intensity in some of the common activities.

Water Pollution

The water we drink is 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, rain water pollution (Ashraf et al, 2010) and polluted by agriculture or households cause damage to human health or the environ-

ment. (European Public Health Alliance, 2009). This water pollution affects the health and quality of soils and vegetation (Carter, 1985).irrigate crops.

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

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). Cu-cu 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 (Krzeslak & 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

Thermal Pollution

Power plants- thermal and nuclear, chemical and other industries use lot of water (about 30 % of all abstracted water) for cooling purposes and the used hot water is discharged into rivers, streams or oceans. The waste heat from the boilers and heating processes increases the temperature of the cooling water. Discharge of hot water may increase the temperature of the receiving water by 10 to 15 °C above the ambient water temperature. This is thermal pollution. Increase in water temperature decreases dissolved oxygen in water which adversely affects aquatic life. Unlike terrestrial ecosystems, the temperature of water bodies remains steady and does not change very much. Accordingly, aquatic organisms are adapted to a uniform steady temperature of environment and any fluctuation in water temperature severely affects aquatic plants and animals. Hence discharge of hot water from power plants adversely affects aquatic organisms. Aquatic plants and animals in the warm tropical water live dangerously close to their upper limit of temperature, particularly during the warm summer months. It requires only a slight deviation from this limit to cause a thermal stress to these organisms.

Radiation pollution

It is the increase in over the natural background radiation. There are many sources of radiation pollution such as nuclear wastes from nuclear power plants, mining and processing of nuclear material etc.

Radiation

Radiation is a form of energy travelling through space. The radiations emanating from the decay of radioactive nuclides are major sources of radiation pollution. Radiations can be categorized into two groups namely the non-ionizing radiations and the ionizing radiations.

Non-ionizing radiations are constituted by the electromagnetic wave at the longer wavelength of the spectrum ranging from near infra-red rays to radio waves. These waves have energies enough to excite the atoms and molecules of the medium through which they pass, causing them to vibrate faster but not strong enough to ionize them. In a microwave oven the radiation causes water molecules in the cooking medium to vibrate faster and thus raising its temperature. Ionizing radiations cause ionization of atoms and molecules of the medium through which they pass. Electromagnetic radiations such as short wave-length ultra violet radiations (UV),

The Necessity of Environmental Education

The planet earth has experienced several disasters with natural or manmade sources. From Ice Age to destructive volcanoes and small and large meteorite impact, the only species of plant and animals have been able to maintain their survival in harsh environmental conditions which have greater adaptive ability. Of these factors, growth of degradation and environmental pollution with human origin can threaten life of humans and other species severely. Part of this destruction caused by lack of public awareness towards environmental issues; so education plays a vital role in preventing environmental crisis. Land always seem to be full of endless resources for mankind and human considered permissible for further exploit of his nature, but soon environmental effects of improper use became evident (Havvey, 1995). With increasing environmental issues such as energy crisis, loss and degradation of natural resources and increasing waste due to development of urbanization and industrialization, human impact on environment has been regarded by scholars. As noted above, many of these problems caused directly and indirectly from human's behavior. From past centuries, education for humans considered as the first priority. Moreover, training can be one of the areas of preparation, skills, knowledge and understanding; in this way they are able to experience life in the world successfully. For achieving this success must turn to environmental education. Thus, environmental education is a remarkable experience which is able to change lifestyle of members of community, because people can use these principles to have a positive contribution to the environment. This instruction can form new behavioral pattern among individuals, groups and communities dependent upon the environment. Thus, it is necessary for individuals to be aware of their surroundings to appreciate and protect of their setting, rather than praising of other areas. Environmental training is believed that humans can live in consistency with nature. Consequently, man can make a conscious decision regarding future generations which is the goal of environmental education. Environmental ab-

normality such as many kind of illnesses like cancers are expanding, every day; as global research centers report of transformation and changes that have occurred or are pointing to the nascent (Forsat, 2005). Optimal use of environment in the country can be guaran-teed durability;

Strategies in Environmental Education, Awareness and Training in India:

Educational Strategy

The Indian constitution laid down the responsibility to protect and improve the natural environ-ment. It is duty of every citizen to protect and improve the natural environment. It was in this back-ground that a department of Environment was established by the government of India in 1980 and a Ministry formed in 1985. This ministry is nodal agency in the central government for the “Planning, Promotion, Coordination and Overseeing the implementation of various environmental programmes. The ministry recognized environmental education as a key to the success of any overall strategy. It has set-up “Centre of Excellence” in the environment education in the year 1984. The main responsibility of Centre of Excellence is development of environmental research materials, organization of training programmes and creation of environmental awareness among teachers, students and general community.

Role of MOEF, MHRD and other Ministries:

The principal responsibilities for environmental education through the formal educational system are responsibility of the ministry of HRM. The parallel responsibility of EE through non-formal efforts lies with the ministry of environment. The national policy on education 1986 (NPE) stated that the “Pro-tection of the Environment is a Value which along with certain other Values, must form an integral part of the curriculum at all stages of education. The National Council of Education Training and Research (NCERT), is the apex body in the area of developing curriculum for the formal education system. Its responsibilities are:

- a) Strengthening Infusion of EE,
- b) Teacher Training for Effective EE,
- c) Introduction of Environment as a separate subject,
- d) Use of non-formal method of EE through the involvement of NGOs.

There is a close synergy and partnership between MHRD and MOEF, their key institutions, State Governments, NGOs as well as Educational institutions throughout the country. CEE is closely involved in the process. The various formal and non-formal environmental education programmes are:

A) Formal Environmental Education:

- 1.) Formal Environmental Education: It is imparted at the school levels. It mandates that environmental components are covered in the school curriculum at various levels.
- 2.) Environmental Appreciation Course (Distance Education): The aim of this programme is to provide interested person an

opportunity to learn in detail about specific environmental issues.

- 3.) IGNOU: Indira Gandhi National Open University through distance education modes provides undergraduate degree.
- 4.) Environmental concepts in Management and Business Studies: The Central Ministry of HRD, Gov-ernment of India in the year 2002 integrated environmental concepts and issues in the syllabi of Man-agement and Business Studies

B) Non-Formal Environmental Education:

Non-Formal environmental educational activities are

- 1) Eco Club International Journal of Teacher Educational Research (IJTER) Vol.1 No.4 December, 2012 ISSN: 2319-4642 www.ijter.com Environmental Education, Awareness and Training: A General Perspective 2) The National Green Corps 3) Population Education Programme 4) Environmental Cam-paigns 5) Globe 6) Green Olympiad 7) Seminars, Symposia, Workshops, Public Meetings, Camps, Ex-hibitions, Puppet Shows and Street Theatre

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 ap-praisal 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. At present the adoption of envi-ronmental auditing in any economic sector is voluntary but future legislation could well make it man-datory (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

- i. Blaxill, M. F. (2004). *What's going on? The Question of Time Trends in Autism. Public Health Reports*, 119(6), pp. 536-551.
- ii. Brauer, M., Hoek, G., Smith, H. A., de Jongste, (2007). *Air Pollution and Development of Asthma, Allergy and Infections in a Birth Cohort, European Society for Clinical Respiratory Physiology*, 29(5), pp. 879-888.
- iii. British Airways, (1993), *Annual Environment Report, London: British Airways plc, Environ-ment Branch, Heathrow.*
- iv. Carter, F. W. (1985). *Pollution Problems in Post-War Czechoslovakia, Transactions of the Insti-tute of British Geographers*, 10(1), pp. 17-44.

v. Ciocco, A. & Thompson, D. J. (1961). *A Follow-up on Donora Ten Years After: Methodology and Findings*, *American Journal of Public Health*, 51(2), pp. 155- 164.

vi. Colls, J. (2002). *Air Pollution*. New York: Spon Press.

vii. Cucu, M., Lupeanu, M. I., Nicorici, M., Lonescu, L. & Sandu, S. (1994). *The Dangerous Wastes and Health Risks in Romania: National Report*, *Central European Journal of Public Health*, 2(suppl), pp. 41-43.

viii. D'Amato, G., Liccardi, G., D'Amato, M. & Holgate. S. (2005). *Environmental Risk Factors and Allergic Bronchial Asthma*, *Clinical & Experimental Allergy*, 35(9), pp.1113- 1124.

ix. De Barteleven, J. (1992). *Eastern Europe's Environmental Crisis*. Baltimore, MD: Johns Hopkins Press

x. European Public Health Alliance, (2009). *Air, Water Pollution and Health Effects*. Retrieved from <http://www.epha.org/r/54>
