

Environmental Awareness

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Abstract: This paper analyzes the growing need of technology and its effect on the environment. Economic growth should be achieved in such a way that it should not harm environment in the first place and if we cannot avoid, it affects the environment as less as possible. Currently the economic growth is at odds with environment which is a cause of concern for the environmentalists or the scientific community. Just like other government departments, MoEF designs and implements policies which contribute to economic performance, productivity growth and economic prosperity of our country. Economic growth and environmental balance must be kept in mind while deciding any project to take in hand. It is the natural environment which is central to economic growth and activity, providing the resources we need to manufacture goods and services, and absorbs and processes unwanted by-products in the form of waste and pollution. Environmental assets are responsible in contributing to managing risks to economic and social activity, also help to regulate flood risks and the local climate (both air quality and temperature), and maintain the supply of clean water and other resources. The India and the global economy is facing environmental challenges, from averting dangerous climate change to halting biodiversity loss and protecting our ecosystems. There has been debate over whether it is possible to achieve economic growth while tackling these challenges. This paper examines the link between economic growth and the environment, and the role of environmental policy in managing the provision and use of natural assets.

Keywords: Environment, Ministry of Environment and Forest, Govt. of India (MoEF), ecosystems, biodiversity, pollution, climate, environmental education (EE) .

1. Introduction

1.1 Environment

Environment can be defined as a combination of living (biotic) as well as non- living (a biotic) components of our surrounding which affects the life of mankind and also gets affected by the activities of human beings. Living components include all Living things and non-Living components include soil, water and air. Presently the environmental issues are on the forefront due to the complexity of the issue that is threatening the survival of the mankind. There are a number of organizations working in our country for the protection of environment for example, BNHS (Bombay natural history society, ZSI- zoological survey of India, etc.

1.2 Elements of Environment

Environment is quite complex and can classified into four segments:

- (a) Atmosphere
- (b) Hydrosphere
- (c) Lithosphere
- (d) Biosphere

Composition of Atmosphere

Atmosphere is simply the blanket of air surrounding the earth including the suspended solid particles and liquids supporting all forms of life on our planet. The lower layer of Atmosphere contains mixture of mainly three –four gases; nitrogen (78.08 %), oxygen (20.94 %), argon (0.93 %), and carbon dioxide (0.03 %) along water vapor and traces of other gases. Three gases namely oxygen, nitrogen and carbon dioxide have immediate biological importance and oxygen directly supports all forms of life. Carbon dioxide (in small amount) is also essential for photosynthesis and if present in large amount, it will produce” Green House

Effect” which directly affect temperature and pressure on the earth creating disastrous situations on our planet..

Functions of Atmosphere

Its main functions are:

- (i) Regulates water through hydrological cycle
- (ii) Regulates temperature and pressure on the earth
- (iii) Absorbs harmful radiations emitted by the sun and hence preserves human life on the planet.

The Atmosphere may be divided in to four layers which are:

- (i) Troposphere (0- 12 km) temperature range (15 to -57 °C), containing all gases including water vapor.
- (ii) Stratosphere (12- 50 km) temperature range (-57 to 18 °C), containing ozone gas.
- (iii) Mesosphere (50- 80 km) temperature range (-18 to - 93 °C), containing O_2^+ , NO^+
- (iv) Thermosphere (80- 500 km) temperature range (-93 to 1982 °C), containing O_2^+ , O^+ , NO^+
- (v) Exosphere (500- 1600 km) temperature range (>1982 °C), containing H_2 and He.

Hydrosphere



Figure 1: Holy River, Holy water and Holy dip



Figure 2: Untreated water being fed into river

Thickness range is 10 to 20 km, includes all sort of water resources. Nearly three fourth ($\approx 71\%$) surface area of the earth is covered with water in the form of oceans, seas, rivers, lakes, glaciers and ground water. Out of this, approximately 97% is in oceans and inland seas. About 2% of the water resources are present in the glaciers and ice caps. Oceans, seas and lake water being highly salty, are unfit for human consumption. So only 1% of water is available as fresh water that is suitable for human consumption. Water has a very important role in metabolic activities apart from being an excellent solvent for nutrients that are essential for human life. Water has a very important property that it warms and cools down, slowly so that aquatic life do not experience any thermal shock.

The environmental education includes different field such as:

- 1) Need for conservation
- 2) Target group and strategies for implementation of environmental education
- 3) Role of education in conservation
- 4) Role of out of school activities in conservation
- 5) Conservation of biodiversity
- 6) Measures for conservation of biodiversity
- 7) Role of botanical gardens in conservation and environmental education.
- 8) Environmental hazards

2. Environmental Education

The concept of environmental education was coined at the UN conference in Stockholm in 1972 for the first time. In Agenda 21 a holistic view of EE was adopted and acknowledged by 175 countries at the first UN Earth summit in Rio de Janeiro on environment and development.

- Emphasizes active responsibility;
- Is interdisciplinary and holistic in nature and application;
- Concerns the relationship and connectedness between human and natural systems;
- Views the environment as an entity that includes economic, social, technological, moral, aesthetic and spiritual aspects.
- Encourages active participation in the learning process.
- Is a lifelong process;
- Uses a broad range of teaching and learning techniques with stress on practical activities and firsthand experience.
- Is related to build an environmental ethic.

Environment: Its Protection and Conservation

India has got world's first recorded conservation measures that were enacted during the third century BC at the time of Emperor "Ashoka the Great", whose benevolence extended to all living beings. His edicts on stone, on nature conservation, can be seen even today. Thus, the Indian tradition of love, respect and reverence for nature goes back to time immemorial. Ishopanishad over 2000 years ago says that *'This Universe is the creation of supreme power meant for the benefit of all his creation'*. Hence each and every individual life form must, learn to enjoy its benefits by forming a part of the system in close relation with other species. Let not any one species encroach upon other's rights. Gadgil (1982) wrote that even at this time certain trees were regarded as sacred and never cut. Certain areas under forest were regarded as God's grooves and deadwood and leaves were taken out from these regions.

Pollution

Pollution may be defined as introduction of some or more contamination into the Environment (Webster.com 2010).

Air Pollution

Air pollution may be defined as the introduction of chemicals, particulate matter, or biological materials which harm or discomfort to humans or other living organisms, or damages the natural environment into the atmosphere.

Sources of Air Pollution



Figure 3: Air pollution (industrial smoke)



Figure 4: Air pollution (vehicular smoke) in Delhi

Effects of Air Pollution

Air Pollution has many fold effects on human health some of them are

- (a) Conjunctivitis
- (b) Sore throat
- (c) Asthma
- (d) Tuberculosis
- (e) Bronchitis



Figure 5: Air pollution (vehicular smoke) in Delhi

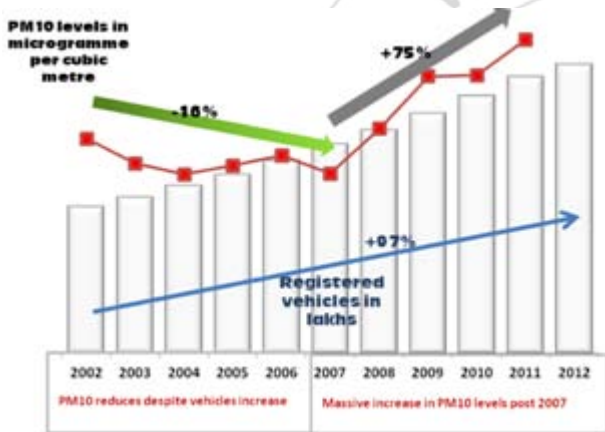


Figure 6: level of air pollution in Delhi

Sources of water Pollution

Water Pollution may be defined as introduction of excessive amount of hazardous substances in water so that it becomes unfit for drinking, bathing and cooking etc.

Water pollution may occur on account of following activities:

- (a) Sewage water being fed into a fresh water source
- (b) High population density
- (c) Industrial waste dumped into fresh water source
- (d) Pollution of ground water through drilling activities
- (e) Combustion (Vehicles and industrial)
- (f) Deforestation
- (g) Flooding during rainy season that carries waste and deposits into the source of fresh water.
- (h) Mineral processing plants (coal production)
- (i) Toxic waste disposal at sea
- (j) Mining
- (k) Pesticides
- (l) Littering
- (m) Animal waste
- (n) Fertilizers and herbicides used in agriculture



Figure 7: untreated water being fed into a river



Figure 8: untreated sewage water being fed into a river

Effects of Water Pollution

Polluted water has many fold effects on human beings. The Polluted water causes roughly 14000 deaths per day , mostly on account of contamination of drinking water in developing countries. Approximately 500 million Chinese have no access to safe drinking water. The situation is no better in India. According to a report , nearly 700 million Indians do not have access to proper toilets and nearly 1000 Indian children die on account of diarrhea per day.

Land Pollution



Figure 9: A typical Land pollution image

Land pollution can be defined as degradation of Earth's land surfaces normally caused by human activities and their misuse of land resources.

Causes and sources of Land Pollution:

- 1) Quarrying and mining
- 2) Exploitation of minerals
- 3) Industrial waste

- 4) Agricultural waste
- 5) Sewage and sludge
- 6) Demolition and construction waste
- 7) When waste is not disposed properly.
- 8) Dredge spoils

3. Environmental Education in Malta: A Case Study

Malta has a typically a highly centralized education system where teachers are very rarely, if ever, consulted about curricula. As Pace notes (1997), elementary school curricula are essentially fragmented and mono-disciplinary, making interdisciplinary learning hard to apply. Even though environmental topics have become much more relevant in recent years in secondary schools, it is also fragmentary. While environmental education is not a national Maltese priority, at least there is a growing awareness phase by government and other organizations where the need to incorporate environmental topics into their educational system is being recognized. Different organizations have included environmental education in their agendas. However, they have been forced to work in an uncoordinated way due mainly to a lack of official support and organization (16).

As Pace (1997) declares, "In an attempt to improve the situation the Education Division, the Environment Secretariat, the faculty of education and some NGOs jointly organized the Second National Training Workshop on Environmental Education in Malta (May 1995). The goal of the event was that of getting all those involved in environmental education together to; become aware of the state of environmental education in the region, identify the problems, needs and support required for the successful implementation of environmental education initiatives and, to discuss the possibility of coordinating these initiatives so as to improve their effectiveness".

While Malta has a long way to go before a national environmental education strategy can be fully implemented in their educational system, the country has at least recognized the intention of incorporating environmental education into their education system and some efforts in this direction are being produced.

4. Technological advances and Environment

Agarwal (1999) reports that the tremendous advancement of industrialization resulted into economic development but at the same time continuously degraded the environment. Moreover, over-population, urbanization and poverty also intensified the problem.

Initially the problems arising from the pollution of human environment were not realized earlier as the effect was less and hence attention was not paid to make rules and regulations in this connection. The United Nations in the first two decades had been painfully slow in dealing this topic under the influence of United States.

The United Nations convened a major Inter-governmental Conference on "The Human Environment" at Stockholm in June 1972. Undoubtedly it was the most important conference of an international importance and to a great extent international concerns and issues about our environment were reviewed, discussed and analyzed. The conference undoubtedly raised the environmental consciousness of the world and sensitized public opinion. (Biswas & Biswas, 1987). The various environmental issues were discussed under three broad categories: interrelationship between people, resources, environment and development; rational use of natural resources and new patterns of development and lifestyles. Thus a realization came that the man's future on this earth is bleak if he does not use natural resources rationally and does not take immediate steps to repair the damage already done to environment and hence the ecosystem.

5. Discussion

As stated earlier only 1% of the total water is available for human consumption and that 1% is being spoiled by us for little gain. For example, when I was in eighth standard, the river water was almost potable, but now days the situation has entirely changed.

As a matter of fact, we cannot stop the technological advancement at this stage but we can and must take measures so that its effect on the environment should be the least. Water and air are very much essential for the survival of the mankind and hence must be preserved at any cost. Forests provide us the very much valuable assets and that is **oxygen** by the process called "**photosynthesis**" apart from providing fruit and wood that may be used for furniture, fuel etc. Forests also provide us water and conserve soil, maintain the temperature of the earth by absorbing carbon dioxide. Trees loose excess water by the process called "transpiration". Water is the most important natural material essential for the survival of the mankind along with air, both of which are provided by the forests directly or indirectly. Now a days everyone is carrying water bottle with



Figure 10: Water bottle being used by everyone

them? Why? It is because the water is highly polluted. Who is responsible for this? A few people, in the name of industrialization, that is technological advancement. These few people are benefitted and the whole society suffers due to them. Each and every one is running for money!!! A

common man, a business man, a government official, a minister and so on, the list is long.....A common man runs for his survival but a business man runs only for money disregarding the interest of the society as a whole and this is how the problem of pollution is created for the society. The government officials, who are drawing fat salaries and are the regulators, collude with the businessmen to grab money from the businessmen and become the silent spectators and rules and regulations are kept aside and the law becomes a mockery in the process. All the rivers in India are polluted as the Sewage and all kinds of dirty water is directly fed into the river without any treatment.

The river Ganga which is regarded as Holy River in our society, for example has clean water up to Haridwar and coming down to Kanpur, its water becomes so polluted that one cannot take bath in the river. The reason behind it is the same as mentioned above. For example, at Kanpur, there is a canal which carries all untreated water feeds directly into the river. The water of the canal is so polluted that one breathes near it.

This is the reality in our Great India where no one cares about the country? As all of us know that excess of carbon dioxide (i.e. left over from the Photosynthesis) produces greenhouse effect that



Figure 11: untreated water being fed into a river



Figure 12: Garbage lying near main water source

is converting more fertile area into the desert, a forestation is the only way to come out of this crisis which is the creation of our own. Over population is also a reason behind it. For example, at the time of Mahabharata, the Rajasthan was a green belt. It is the reckless felling of the trees that has created the present situation and the green Rajasthan has been converted into the desert! Same is the story of Sahara desert of Africa. And to add insult to injury, the desert area is still increasing!! So, the solution lies in the plantation of

trees by public and government participation by the following ways:

- Environmental education must be included in the curriculum of schools, so that every citizen has proper knowledge of Environment.
- We should plant at least one tree per year and nourish it till it becomes mature
- We can use kitchen waste water for the trees.
- For rural areas since there are no bathrooms, we can plant a tree where one takes bath in open.
- No one should be allowed to feed untreated water directly into the river or any fresh water source.
- If required the government should add one coach in a train that carries water for the remote area or the desert area for the purpose of plantation.

6. Future Scope

Abdul Raheem Khan-a-Khana, the famous poet of sixteenth century and one of nine gems of the Great King Akbar has written that "Rahiman paani raakhiye, bin paani sab soon, paani gaye na ubarahin, Moti, Manus, Chun". This tells the importance of water even in the ancient time when the population was less and the sources of water were not polluted, as there were no industries at that time. At that time even the river water was potable.

It is said that first and second World wars were fought on petty issues but the Third world war will be fought on the issue of **water** !

Likewise the other components (Air & Water) of the Environment have similar importance.

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