

HISTORICAL RETROSPECT: ENVIRONMENT POLLUTION, INDUSTRIAL POLLUTION

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ABSTRACT:

Despite all the legal provisions, historically the statutory authorities have miserably failed to control the water pollution. How to bring down the extent of pollution to a desired level? This is really a problem. Especially when looked in the socio-economic spectrum. Our country is a developing country. We need industries to cater to the needs of our people, to enhance their standard of living and at the same time to compete with the advanced nations in the world market. The center of problem is of harmonization of pollution with industries.

Keywords: Civilization, Pollution, Resources

INTRODUCTION:

The existence of human civilization is dependent upon man's use of natural resources. Resources are defined as those parts of the bio-physical environment which are appraised by man as being immediately and potentially useful to them. A basic understanding of natural resources ideally includes their characteristics, distribution, status, interrelationships and their present and potential uses. A strong understanding of how these resources are used requires knowledge of the social, political, economic, technological processes, institutional arrangements, and aesthetic consideration which govern their utilizations.¹

Our existence, lifestyles and growth depend entirely on the sun and the earth. The energy from the sun is called solar capital. In the same way, the planets, air, water, fertile soil, forests, grasslands, wetlands, oceans, lakes, wildlife, minerals and natural purification and recycling process are treated as Earth's capital. We use the term 'environment'² to describe, in the language of G.T Miller, The Plant's life – 'support system for us and for all other forms of life'. In effect, the environment is the sum-total of solar capital and earth capital. It also includes the thing created by humans. Environment now extends far beyond the bounds of the local environment; thus, it is the intimate enclosure of the individual or a local human population and the global

domain of the human species. The ancient and medieval Indians placed great emphases on the purity of environment. Yagnas were often performed to purify the air by burning fragrant materials. Rivers were considered to be sacred. The major off shoots of environmental pollution are: Water, Air and Noise. This led to the great diversification of species that we see at the present time, with each species restricted to its particular microhabitat and place in the community.³

MEANING OF ENVIRONMENT

The word “environment” relates to surroundings. It includes virtually anything. Indeed, Einstein once remarked: “The environment is everything that is not me”. We can also define ‘environment’ as anything which may be treated as covering the physical surroundings that are common to all of us, including air, space, waters, land, plants and wild life.

TYPES OF ENVIRONMENT

Environment can be classified into 3 broad types

a) Biotic (living) -

The word biotic refers to having to do with living organisms. Biotic elements refer to the biological component of the ecosystem, consisting of population of plants, animals and micro-organisms in complex communities. The biotic factors influencing organisms, viruses and other parasitic organisms cause diseases. The consumers are organisms whose very survival depends on the organic material manufactured by the producers. The consumer represents animals of all sizes ranging from large predators to small parasites, such as mosquitoes and flies. Some consumers (herbivores such as rabbits) are directly dependent on primary producers for energy. Others (carnivores such as tigers) depend indirectly on primary producers. The last group of living organisms is the decomposers. These include microorganisms such as fungi, bacteria, yeast etc. as well as a diversity of worms, insects and many other small animals. They all rely on dead organisms for their existence and survival.

b) Abiotic -

Abiotic factors include the flow of energy necessary to maintain any organism, the physical factor that affect it and the supply of molecules required for its life functions. Other physical factors include climate, temperature, precipitation, including its types (rain, snow, hill) around and seasonable distribution, types of soil present (sandy or clay, dry or wet, fertile or infertile).

These elements constitute 95% of all living organisms. 3rd, the Earth contains only a fixed amount of these elements. Thus, continual functioning of the ecosystem requires one thing

at least. These elements have to be recycled because they are critical to the welfare of the ecosystem as a whole.⁴

c) **Cultural** -The stage of development that human being has attained in the path towards progress will determine their culture as way of life. Due to this diversity of background different cultures put different values on the natural world. But the general attitude has been one of development rather than preservation.⁵

Nature and environment are commonly used terms for the ecology. Man is seen as a sort of geological force reshaping landscape, favoring some kinds of organisms and destroying others, changing the very composition of the atmosphere and starting new chain of radio activity with atomic explosions.⁶

CONCEPT OF ENVIRONMENT IN ANCIENT INDIAN PHILOSOPHY

In India and elsewhere, as awareness of clean water needs, pollution of air, water and soil, global warming, species extinction, etc. creates urgency for action, religious thinkers and activists have begun to reflect on how the values of Indian tradition might contribute to fostering greater care for earth's ecology.

It has been argued by ancient Indian philosophers that man being an intelligent creature should have the protection of environment as one of the fundamental duties. The fragility of the environment has also been carefully stressed in such discourses. The principal cosmic-vision is fully integrated in two different but related traditions- the oral and textual.

Indian thought explains Environment as a given entity which is transcendental in nature. It perceives that there is life in all kinds of things, it might be biotic or non-biotic material. There is greater emphasis on mutual dependence where living in isolation was not possible.

“DHARMA” OF ENVIRONMENT

Towards the end of his reign, King *Ashoka* in the third century BC, issued a decree that has particularly contemporary ring in the matter of preservation of environment. He had; “Twenty-six years after my coronation, I declare that the following animals were not to be killed, parrots, mynas, the aruna, ruddy geese, wild geese, the nandimukha, cranes, bats, queen ants, terrapins, boneless fish, rhinoceroses... and all quadrupeds which are not useful or edible... forest must..., not be burnt.”

As *Manu*⁶ says different punishment were prescribed for causing injuries to plants. *Kautilya*⁷ went a step further and fixed the punishment on the basis of the importance of the part of the tree. The *Rig Veda* praises the beauty of the Dawn (*Usha*) and worships nature in all its glory. And yet today a bath in the Yamuna and the Ganga is a sin against bodily health, not a salvation for the soul-so polluted and noxious are these ‘Holy’ waters now.

It is difficult to define environment and explain its nature. ‘It’s normal meaning relates to ‘surrounding’, but obviously that is a concept that is relative to whatever object is surrounded’.⁸ The term ‘environment’ means the entire range of external influence acting on an organism, both the physical and biological and other organism, i.e., forces of nature surrounding on individual. Gandhiji envisaged the environment as a repository of human spirit and said “I bow my head in reverence to our ancestors for their sense of beauty in nature and for their foresight in investing beautiful manifestations of nature with religious significance”.⁹

‘The environment includes water, air and land and inter-relationship which exists among and between water, air and land and human beings other living creatures, plants, microorganism and property’¹⁰.

ISLAMIC VIEW ON ENVIRONMENT

An Islamic Approach to the Environment

One scientist answered this question by saying “we have 4095 environments.” By this he wanted to emphasize that when saying “environment,” it is insufficient to understand only the natural environment. The Qur’an expresses this truth as follows:

To God belong the East and the West; whithersoever you turn, there is God’s countenance. For God is All-Embracing, All-Knowing.¹¹

Another noteworthy point of the Qur’an’s related to the environment is this:

In the Name of God, the Merciful, the Compassionate. All praise be to God, the Sustainer of all the worlds.¹²

This induces us to consider the environment from a broad perspective. We should not forget that the Creator and Owner of all environments is at the same time our Creator. Thus, our environment is formed by our house, garden, and car, the air we breathe, the water we drink, the town in which we live, and the people we live with.

We shall show them our signs in the [furthest] regions [of the earth], and in their own souls.¹³

In the creation of the heavens and the earth; in the alternation of the night and the day; in the sailing of the ships through the ocean for the profit of mankind; in the rain which God sends down from the skies, and the life which He gives therewith to an earth that is dead; in the beasts of all kinds that He scatters through the earth; in the change of the winds, and the clouds subjugated between the sky and earth—indeed are signs for a people who thinks.¹⁴

Concept of Environmental Protection

The environment has been defined as that outer physical and biological system in which man and other organisms live as a whole. It includes of many interacting components. These components are: “its rocks, minerals, soils and waters, its lands and their present and potential vegetation, its animal life and potential for livestock husbandry, and its climates.” There is a close relationship between man and the environment. History is a witness to the fact that the man has been endlessly struggling continuously to manage his environment so as to improve his well-being.

Today, we are concerned with a different kind of threat that lurks on our environment. This threat is the direct result of massive industrialization, mechanization, motorization and chemicalisation of agriculture. These processes have resulted in poisoning the air, the rivers and the soil itself. This not only endangers human beings and animal life but also seriously affects vegetation on earth. Today cities are not only plagued with smoke, gases, smog, radiation, but equally the rivers and lakes in the world are so alarmingly polluted that these have rendered the quality of water unfit for human consumption and have also affected aquatic life.

Indiscriminately cutting forests, denudating lands, destroying vegetation is resulting in changed weather conditions, causing droughts, floods, and extinction of rare species of plants, animals and birds. Ruthless extracting of minerals and indiscriminately processing ores is along with

their depletion, causing air and water pollution. Even the “Ozone layer” is being damaged that is a vital protective cover of Earth.

Concept of Environment in Indian Legal System

In India environmental law has seen considerable development in the last two decades. Most of the principles under which environmental law works in India come within this period. The development of the laws in this area has seen a considerable share of initiative by the Indian judiciary, particularly the higher judiciary, consisting of the Supreme Court of India, and the High Courts of the States. The role of the administration, although a critical factor in the success of any environmental management programme, has seen its share of problems of scale and definition. The essence of the existing law relating to the environment has developed through legislative and judicial initiative¹⁶

Today, most discussions on environmentalism in our country begin with the Stockholm

Community resources such as tanks, ponds, etc. have now been articulated by the Supreme Court for inclusion in the concept of environment, and why should it not be so, considering they all affect the quality and enjoyment of our life¹⁶.

Environmental Jurisprudence in India made a beginning in the mid-seventies when Parliament enacted the Water (Prevention and Control of Pollution) Act, 1974. But soon, there was a quantum leap with the amendment of our Constitution in 1976 and incorporation of Article 48-A¹⁷ in the Directive Principles of State Policy and Article 51.

Prior to 1980s, only the aggrieved party could go to the court and seek remedy for his grievance and any other person who was not personally affected could not do so as a proxy for the victim or the aggrieved party. But around 1980, the Indian legal system, particularly the field of environmental law, underwent a drastic change in terms of discarding its moribund approach and instead, charting out new horizons of social justice.¹⁸ The Supreme Court appreciated the necessity of sternness in environmental issues and seized the opportunity in *Municipal Council, Ratlam*¹⁹ in this case residents of Ratlam filed a complaint under Section 133 of the Criminal Procedure Code alleging that the Municipality had failed to prevent the discharge from the nearby alcohol plant of malodorous fluids into the public street and provide sanitary facilities on the roads. The Municipal Council approached the Supreme Court and one of the key questions raised was whether “by affirmative action a court can compel a statutory body to carry out its duty to the community by constructing sanitation facilities at great cost”.

The Supreme Court was called upon, under these circumstances and in the absence of any legal framework or any precedent, to perform a creative but delicate exercise and come out with novel

solutions and ideas to tackle the crisis. This was achieved by setting up enquiry committees from time to time. Various committees appointed by the Supreme Court included:

1. The Bhargava Committee to look into the question whether safety standards were met by the mines, the possibility of landslides due to quarrying and any other danger to the individuals, cattle and agricultural lands due to mining operations.
2. An Expert Committee called the Valdia Committee to look into the disturbance of the ecology, air, water and environmental pollution due to quarrying and the use of stone crushers.
3. A High Powered Committee headed by Mr. Bandopadhyay to look into some of the aspects mentioned above and also a Monitoring Committee called the Geetakrishnan Committee to monitor the directions issued by the Supreme Court.

THE IDEA OF POLLUTION

The important natural resources are land, water, air, forest, human being have exploited these resources to a great extent for their own selfish purposes. This leads to many depletions as well as pollution. The effect of these factors has serious consequences for the human society and hence conservation of these resources or resource management is extremely essential. In the beginning of the 4th five-year plan problems and issues centred around environment received special attention of the Government of India. This resulted in establishment of the National Council for Environment Planning and Co-ordination in 1972 at the Department of Science and Technology. Another empowered committee was setup in 1980 for review of the existing legislative measures and administrative machinery for ensuring environmental protection and for recommending ways to strengthen them.

POLLUTION / DEPLETION OF NATURAL RESOURCES

1) Land Pollution - it means soil pollution, soil erosion, water logging, salinity of the soil and reduction of nutrients in the soil are the main ways in which soil pollution occurs, following are its causes –

- i) Faulty agricultural practices - these includes over cropping, excessive use of chemical fertilizers and pesticides.
- ii) Deforestation - it is the most important factor in land pollution.
- iii) Excessive use of underground water - this leads to increase in the salinity of the soil.
- iv) Over - irrigation - this has led to water logging and salinity of the soil.
- v) Unlined canals - in many cases canals through which water is carried are unlined. Water seeps through such canals and water logging takes place.

Effects –

Since the quality of soil deteriorates due to land pollution, the most serious effects is on the agricultural productivity, this effect is especially significant in Indian situation because

majority of the people depend upon agriculture as its main occupation. Agricultural productivity suffers in a negative manner, it intensifies the problems of poverty.

Land –

Conservation of land is related to conserving the soil. Every year top most fertile soil is lost or soil erosion is taking place at a greater rate. This is particularly hazardous for the agricultural countries. Hence various strategies to control soil erosion and to improve the quality of soil are necessary.

1) Offering a menu of techniques - instead of promoting a single method of soil conservation it is necessary to provide a variety of techniques and allow the farmers to select as per the local circumstances.

2) Contour based cultivation - Contour is the line joining points of equal height. It is carried out where the land is uneven Hence land levelling is carried out.

3) Agroforestry and integrated crop and livestock techniques - Agroforestry involves combination of crops and of fruit trees. Integrated crop used methods such as crop rotation and multiple crop.

4) Planting vetiver grass - Grass has a basic capacity of improving fertility. Since its roots are strong, a type of grass namely, vetiver grass is especially used to improve the soil fertility.

5) Controlled irrigation of land - When water logging is a problem reducing irrigation. Water supply is one of the solutions. Other methods such as sprinkler irrigation systems and used.

2) Water pollution –

This is serious form of pollution - Following are its sources -related to surface, water ground, water and oceans.

i) Pollution of surface water - Ponds, streams takes and rivers get polluted through following sources –

a) Domestic sewage - it consist of sewage water from homes and business concern which pollutes water.

b) Industrial waste in fresh water - large quantities of water pollutants are released into water sources due to different types of industrial activities.

c) Agricultural pollution - this includes sediments fertilizers, pesticides and from animal wastes.

ii) Ground water pollution - in recent years, the pollution of ground water in some areas has increased. So greatly that the underground water may no more be fit for drinking.

iii) Pollution of the oceans - petroleum (crude oil) is the main source of water pollution of the oceans. It is feared that pollution of the oceans could have global effects.

Effects-

- 1) Water pollution is mainly responsible for more human illnesses than any other environmental factor. Three of the common diseases: - Cholera, Jaundice and typhoid are transmitted through water.
- 2) Water pollution is fatal for the aquatic life, fish and sea birds, get killed because of water pollution.
- 3) Artificial eutrophication - a lake, canal usually support a rich variety of plant and animal life. But if it receives large quantities of phosphates and nitrates very little oxygen is available and eutrophication takes place.

Water: -

The supply of water is fixed by nature. But the consumption of water has increased to a great extent. Hence this, has led to a scarcity of water which is especially felt in the poorest countries. Therefore, rational use of water is essential. Various methods of water consumption need to be adopted –

- 1) **Traditional water harvesting system** - traditional systems are usually suited to the local conditions. Hence different areas have their own systems of collecting and sharing water.
- 2) **Watershed development** - this programme depends on the commitment and participatory involvement of the entire village.
- 3) **Pani Panchayat** - it is a water cool which regulates the supply of water from the river to the fields to ensure its optimum use.
- 4) **Johads** - they help in reducing water shortage. They are used to checks dams and tap rain water.
- 5) **Trapping spring water** - this is a new solution to conserve and harvest water.
- 6) **Roof** - tap rainwater harvesting. According to this system the rain water falling on a building roof or terrace i.e. to be collected into a well or tank below.
- 7) **Reclamation of waste water** - reclamation of waste water is used for flushing toilets in Japan and Singapore.

3) Air Pollution: -

It is one of the most common kinds of pollution. Following are the sources of air pollution-

- i) **Indoor air pollution** - In India particularly in villages, firewood, cattle dung, crop wastes and weeds are burned on fuel for cooking.
- ii) **Road transport vehicles** - the exhaust pipes of these vehicles release hydrocarbons into the atmosphere, which are important air pollutants.
- iii) **Aircraft emissions** - this consist of nitrogen oxides and water vapor which are released at high attitudes. At that height, the effects of their pollutants get greatly magnified.
- iv) **Industries** - Manufacturing processes give rise to pollutants. The industries which are the worst air pollutants are petroleum, refineries pulp and paper mills, chemical industry etc.

v) **Radiation** - Radiation from atomic power plants as well as atomic, weapons cause significant air pollution.

Effects – The effects can be classified into two types namely specific effects and global effects. Specific effects - air pollution affects plant life, animals, human being as well as materials. Human beings are more concerned about its effects on human health. Various affects are observed such as cancer, gene mutations, birth defects as well as asthma.

Global effects –

a) **Atmosphere invention** - It is a condition when a warm layer of air lies over the cooler air below it.

b) **Greenhouse effect** - Due to industrialisation and deforestation greenhouse gas carbon dioxide, methane etc. have been circulating above the earth's surface. So, the earth has begun to look like a big greenhouse in which heat is trap. The accumulation of excessive heat is leading to a rise in global temperature. This is also termed on global warming.

c) **Depletion of ozone layer** - The ozone layer protects the earth from the deadly ultra violet rays of the sun. Human activities are affecting the ozone layer and the main chemicals responsible for this are CFC's particularly CFC-ii & CFC -12.

d) **Acid rain** - Due to chemical reactions acidity in the atmosphere has increased. This has led to acid rain which kills, trees and fish, affects agriculture, metals and is indirectly harmful to the health of human being and animals.

e) **Nuclear winter** - This will be caused due to many ground level nuclear explosion. It is lead to fall in temperature in the northern hemisphere to 25°C.

4) Forest –

Causes of environmental degradation.

- i) Many natural resources are shared and the tree value is not known.
- ii) The government's policies subsidizes environmental pollution.
- iii) The exploitation of renewable, resources occur beyond capacity.
- iv) It is in availability of adequate assets for people to exploit the environment.
- v) Uncertainty about environmental problems is making it difficult to deal with the issue of environmental degradation. Various aspects of degradations.

1) Deforestation - the rate of depletion of forest is high, various causes are responsible for deforestation.

- i) Overgrazing.
- ii) Shifting cultivation.
- iii) Commercial tree felling.
- iv) Extracting bamboo and eucalyptus plantation.

Consequences.

- 1) Soil erosion.
- 2) Siltation in the rivers.
- 3) Forest undergrowth.

Effects - Many rural and tribal people depend on forest products for their survival. Forest provide them with fuel, fodder etc. Therefore, deforestation affects this people to a great extent.

Greenhouse effect

Greenhouse effect is a mechanism which causes global warming without a heat trapping blanket of naturally occurring carbon dioxide the earth would have had an average surface temperature of only 0°C instead of 24°C. Average temperature on Mars is -12°C because there is very little carbon dioxide. Whereas the surface temperature (average) on Venus is 350°C because carbon dioxide is present in large quantity on Venus. On the earth the sun radiates energy in the form of light waves that pierce easily into the atmosphere on earth. These waves are absorbed by land, water and life form. The upper part of the atmosphere screens cut a great deal of ultraviolet portion of the sunlight and the clouds in the lower atmosphere reflect and scatter some of the incoming sunlight before it reaches the surface, although the atmosphere is still heated slightly in the process. Much of the heat absorbed during day time is radiated back towards space in the form of larger infrared, waves, which are less energetic and then cannot pierce through the atmosphere as easily as sunshine.

Causes –

The flow of carbon dioxide on earth earlier was caused by only natural process. But with the arrival of industrialisation, carbon dioxide started releasing in large quantity when wood and other fossil fuels such as coal oil and natural gas were burnt. The release of carbon dioxide is much faster than what plants and oceans can absorb or handle. On the other hand, there has been a wide spread cutting of trees, hence no trees are available to soak up this carbon dioxides.

SUMMARY

Despite all the legal provisions, historically the statutory authorities have miserably failed to control the water pollution. How to bring down the extent of pollution to a desired level? This is really a problem! Especially when looked in the socio-economic spectrum. Our country is a developing country. We need industries to cater to the needs of our people, to enhance their standard of living and at the same time to compete with the advanced nations in the world market. The center of problem is of harmonization of pollution with industries.

The leather tanning industry in India is made up of a few large export-oriented units and a large number of manuals, small-scale units producing mainly for the domestic market. These facilities are mostly rather primitive and do not meet the minimum discharge standards. Release

of wastewater from them is seriously compromising groundwater quality, and the problem is compounded by the discharge of heavy metals.

But toxic solid residues and sludge continue to be disposed without treatment, producing noxious gases which cause air pollution.

The tanneries cause water pollution problem as well with high BOD and COD values in their discharges, together with chromium, phenols, sulphides, ammonia, dyestuff, heavy metals, detergents and antiseptic agents. Average compliance with national discharge standards is estimated at a meagre 2 per cent. Even the largest tanneries remove less than 20 per cent of the required pollutants, and 435 tonnes (at least 36 times the standard) of highly toxic chromium compounds are discharged annually into rivers. Substantial amounts of solid waste—approximately 73 million tonnes a year — are also disposed of similarly.

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