

Environmental Protection and Sustainable Development in India

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Introduction:

The environment refers to all conditions and their effects that affect a person's life anytime, anywhere. The environment can be defined as a whole of all conditions and effects that affect the development of life of an organism. The Environmental Protection Act (EPA) was enacted in 1986 to protect and improve the environment. The quality of the environment has declined since the 1960s. This has led to increased pollution, loss of plant coatings, excessive concentrations of harmful chemicals in the atmosphere, and threats to life-support systems. Sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment so that needs can be met not only in the present, but also in the indefinite future. It implies using renewable natural resources in a manner which does not eliminate or degrade them or otherwise diminish their usefulness for future generations. It further implies using nonrenewable mineral resources in a manner which does not unnecessarily deprive future generations from easy access to them. It is gratifying to note that during the past decade or so, economists have become increasingly aware of the importance of environmental issues for the success of development efforts. It is now recognized that the interaction between poverty and environmental degradation can result in a self-perpetuating process in which, as a result of ignorance or economic necessity, people may destroy or exhaust the resources which are vital for their very survival. Deterioration of the environment can further slow the pace of economic development by imposing high costs in terms of medical costs and reducing resource productivity. Not only that, the severe environmental degradation caused by population pressure on marginal areas is responsible for the decline in agricultural productivity and per capita food production, which is harmful to the poor. They also suffer from the lack of sanitation and safe drinking water, which is believed to be responsible for 80% of the world's illnesses. Therefore, there is growing consensus among economists that environmental considerations and costs should be an integral part of policy initiatives to ensure environmentally sustainable growth. Damage to soil, water supplies and forests caused by unsustainable production methods has contributed significantly to the long-term decline in national productivity. Similarly, rapid population growth and expanding economic activity in developing countries tends to cause widespread environmental damage unless appropriate measures are taken to control their harmful effects.

Key Words: Air pollution, water pollution, solid urban waste, soil degradation, deforestation, loss of bio-diversity.

Methodology:

The study is of descriptive type based on both primary and secondary sources. The data obtained from various published and unpublished books, records, reports and journals of the government of India, internet surfing and visiting and collecting facts and information from different departments of Government.

Objectives:

1. To ensure sustainable and equitable use of resources for meeting the needs of present and future generations without causing damage to the environment.
2. To prevent further damage to our life support systems
3. To conserve and nurture the bio-diversity gene pool and other resources for long term food security.
4. To create sustainable improvements in the quality of life for all people.
5. To promote international equity.

Environmental problems:

These issues generally depend on the level of development, the structure of the economy, the production technology used, and environmental policies. But some of the biggest environmental problems facing developing countries are

1. Air pollution: Urbanization and industrial growth have caused air pollution. In major cities, increased vehicle traffic is a major cause of air pollution. Other reasons for this are two-stroke engines, old vehicles, traffic jams, poor roads, and lack of traffic control systems. In general, the problem of industrial pollution is serious in areas where oil refineries, chemicals, steel, non-metal products and industries are located. People who live in shantytowns, slums, and poorly ventilated homes and use household stoves, wood, and coal for cooking further increase air pollution. Above all, smoky indoor air is detrimental to the health of women and children. Other sources of air pollution in cities are noise from vehicles, construction activities, speakers, and so on. Thermal power plants are another source of pollution. 2. Water pollution: Water quality continues to deteriorate around the world due to many factors. The most widespread water pollution is due to industrial waste. Where industry and mining expand, rivers are polluted with toxic chemicals and heavy metals such as lead and mercury. These contaminants are difficult to remove from drinking water using traditional cleaning systems. The capacity of rivers to support aquatic life is decreased. Not only surface water near towns and cities has become increasingly polluted over the years, even groundwater has been contaminated as a result of seepage from the improper use and disposal of heavy materials, synthetic chemicals and other hazardous wastes. Sometimes, industrial effluents are discharged directly into groundwater. The polluted and untreated water causes water borne diseases like diarrhea, hepatitis, gastroenteritis etc.

3. Solid urban waste: Solid wastes also cause air and water pollution in urban areas. The growth of unregulated cities without facilities such as solid waste collection, transportation, treatment and disposal pollutes air and water resources. In addition, accumulated debris and clogged drains can spread infectious diseases and contaminate groundwater resources. Management and disposal of solid and biomedical waste is also a major concern in most urban areas. According to one estimate, annual solid waste generation in Indian cities will increase from just 6 million tonnes in 1947 to 48 million tonnes in 1997 to about 300 million tonnes by the middle of this century. .. In a big city like Kolkata, the amount of MSW generated per day is about 2500 tons.

4. Soil degradation: Soil degradation is another environmental problem. It is caused by water and wind. Soil erosion in hill areas is caused by rain and rivers. It also leads to landslides and floods. Deforestation, overgrazing and step farming in hilly areas further cause soil erosion. Water logging on irrigated lands and intensive agriculture lead to soil degradation. All types of soil degradation reduce soil fertility. Soil erosion takes place when the surface soil is washed away through excessive rains and floods. It occurs because of indiscriminate falling of trees and conversion of forests into cultivated land, uncontrolled grazing by cattle and wrong method of cultivation. The annual soil loss from erosion is tremendous and the consequences are disastrous; heavy siltation of the dams and reservoirs, stream and river beds reduces their capacity to hold water and thus results in increasingly disastrous floods. It is difficult to calculate the total national loss due to soil erosion, but the loss is estimated to be about 670 million tonnes, which is an annual loss of 8.7 million tonnes with the main nutrients phosphorus and potassium alone. Based on current market prices, the current annual loss due to soil erosion is approximately 60,000 rupees.

5. Deforestation: This is another factor that causes environmental problems. Deforestation leads to logging of trees and the natural growth of plants, building industries, building cities, roads, highways, dams and more. This destroys the flora and fauna. It causes floods in hills and adjacent areas. There is loss of human and animal life. The green landscape changes into factories, residential and commercial buildings. It produces more heat and noise pollution which lead to the death of humans. It also causes birth defects and genetic problems. Forests are of immense value in protecting the environment. They provide a livelihood and cultural integrity for forest dwellers and a habitat for a wealth of plants and animals. They protect and enrich soils, provide natural regulation of the hydrologic cycle, affect local and regional climate through evaporation, influence watershed flows of surface and groundwater, and help to stabilize the global climate by sequestering carbon as they grow. Therefore, they play a useful role in preserving the ecological and environmental balance and in maintaining the biodiversity and ecosystems. However, unmindful of these facts, deforestation has continued unabated and at a fast rate all over the world as man has cleared forests for extending agriculture and obtaining firewood, industrial wood, and timber and construction materials. In India, presently only 22.8% of the country's land surface is under forest cover as against the target of 33% recommended by the National Forest Policy of 1952. As much as 78% of the forest area is subject to heavy grazing and other unregulated uses, adversely affecting productivity and regeneration. Moreover, large scale deforestation in recent decades has exposed sensitive catchments areas in the Himalayas and other hilly areas to soil erosion.

6. Loss of biodiversity: India is a country with wide variety of agro climatic conditions which harbor a wide variety of animals and plants. According to an estimate, India ranks 10th in the World and 4th in Asia in terms of plant diversity. As agriculture is becoming more and more commercialized, a number of plant and animal species are becoming extinct. Crops show high profits and cover more acreage, while unprofitable crops decline rapidly, causing many environmental problems. There are concerns about the depletion of vegetation covers such as grasslands and

forest tree species and the extinction of related wildlife, birds and insects. Other estimates indicate that more than 1500 plant species, 79 mammals, 44 birds, 15 reptiles, 3 amphibians, and some insects are endangered. In India, the habitat of our species is being lost or altered under the pressure of a rapidly growing population and unplanned development of the natural environment. This also led to the disappearance of certain species and ecosystems. In India, 103 species of mammals and birds have been listed as endangered under the Wildlife Protection Act, 1972 and 5 such species are known to have become extinct in recent past. As far as marine ecosystems are concerned, there is hardly any knowledge and understanding about them. Therefore, no protection measures have been undertaken to prevent exploitation and destruction of these resources.

7. Global warming and climate change: It refers to the variation in the earth's global climate or in regional climates over time. Glaciers are probably one of the most sensitive indicators of climate change. For the last century, however, glaciers have been unable to regenerate enough ice during the winters to make up for the ice lost during the summer months which is a cause of concern. Change in sea level also is an important consequence of climate change.

Our climate is dependent on various factors such as temperature, wind and rain, location on the globe and the rotational and revolutionary movement of the earth. Human industrial activity, mainly, the combustion of fossil fuels, has resulted in large scale production of certain gases such as carbon monoxide and carbon dioxide and oxides of nitrogen that have heat trapping properties. These form a shield in the upper atmosphere. Now earth receives heat from the sun, absorbs part of it and reflects a part back to space. These gases usually effectively reduce the amount of reflection and return. This is known as the greenhouse effect. As a result, the average temperature in the world is rising. It is estimated that the temperature of the earth has risen by about 1.5 degrees Celsius in the last 200 years.

8. Ozone depletion: Ozone depletion is primarily the result of increased atmospheric chlorine levels derived from CFCs (chlorofluorocarbons). CFC, an artificial industrial chemical, is a useful compound, but it does not dissolve in rain or react with other gases in the atmosphere. Therefore, CFC gas molecules rise very high in the atmosphere, causing serious damage to the depleted ozone layer. An important consequence of ozone depletion is the increased solar ultraviolet (UV) radiation that the surface of the earth receives. Ozone depletion can lead to an increase of about 25% in skin cancer and an increase in eye damage from cataracts by about 7% within decades. Increased UV radiation can also adversely affect crop productivity, forestry, and natural ecosystems, including disruption of the marine or aquatic food chain. Thus, the CFCs indiscriminately used by certain industries are a serious threat to the life support system on earth.

Forest Conservation

The role of forests in the national economy and in ecology was emphasized in the 1988 National Forest Policy, which focused on ensuring environmental stability, restoring the ecological balance, and preserving the remaining forests. Other objectives of the policy were meeting the need for fuel wood, fodder, and small timber for rural and tribal people while recognizing the need to actively involve local people in the management of forest resources. Also in 1988, the Forest Conservation Act of 1980 was amended to facilitate stricter conservation measures. The 2009 Indian national forest policy document emphasizes the need to combine India's effort at forest conservation with sustainable forest management. India defines forest management as one where the economic needs of local communities are not ignored; rather forests are sustained while meeting nation's economic needs and local issues through scientific forestry.

Protection of Wetlands

Wetlands are complex ecosystems and encompass a wide range of inland, coastal and marine habitats. They share the characteristics of both wet and dry environments and show immense diversity based on their genesis, geographical location, hydrological regimes and substrate factors. They include flood plains, swamps, marshes, fishponds, tidal marshes natural and man-made wetlands. Among the most productive life support, wetlands have immense socioeconomic and ecological importance for mankind. They are crucial to the survival of natural biodiversity. They provide suitable habitats for endangered and rare species of birds and animals, endemic plants, insects besides sustaining migratory birds. India has a wealth of wetland ecosystems distributed in different geographical regions. India is also a signatory to the Ramsar Convention on Wetlands and the Convention of Biological Diversity; Apart from government regulation, development of better monitoring methods is needed to increase the knowledge of the physical and biological characteristics of each wetland resource, and to gain, from this knowledge, a better understanding of wetland dynamics and their controlling processes. India being one of the mega diverse nations of the world should strive to conserve the ecological character of these ecosystems along with the biodiversity of the flora and fauna associated with these ecosystems. The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 158 Contracting Parties to the Convention, with 1758 wetland sites, totaling 161 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. Ramsar Convention is the only global environment treaty dealing with a particular ecosystem. The Ramsar Convention on Wetlands was developed as a means to call international attention to the rate at which wetland habitats were disappearing, due to lack of understanding of their important functions, values, goods and services. Governments which have joined the Convention are expressing their willingness to make a commitment for helping to reverse that history of wetland loss and degradation. In addition, many wetlands are international systems lying across the boundaries of two or more countries, or are part of river basins that include more than one country.

Conservation of Biodiversity

Conservation of Biodiversity is the need of the hour. The Biological Diversity Act, 2002 is a federal legislation enacted by the Parliament of India for preservation of biological diversity in India, and provides mechanism for equitable sharing of benefits arising out of use of traditional biological resources and knowledge. The Act was enacted to meet the obligations under Convention on Biological Diversity (CBD), to which India is a party. The National Biodiversity Authority (NBA) was established in 2003 to implement India's Biological Diversity Act 2002. The NBA is a Statutory, Autonomous Body and it performs facilitative, regulatory and advisory function for the Government of India on issues of conservation, sustainable use of biological resources and fair and equitable sharing of benefits arising out of the use of biological resources.

Wildlife Conservation

Wildlife conservation is the practice of protecting endangered plant and animal species and their habitats. Among the goals of wildlife conservation are to ensure that nature will be around for future generations to enjoy and to recognize the importance of wildlife and wilderness lands to humans. Many nations have government agencies dedicated to wildlife conservation, which help to implement policies designed to protect wildlife. Numerous independent nonprofit organizations also promote various wildlife conservation causes. Wildlife conservation has become an

increasingly important practice due to the negative effects of human activity on wildlife. Wildlife Conservation Act 2002 was enacted to protect wildlife in India. The main objective of Project Tiger is to ensure a viable population of tiger in India for scientific, economic, aesthetic, cultural and ecological values and to preserve for all time, areas of biological importance as a natural heritage for the benefit, education and enjoyment of the people. Project Elephant (PE), a centrally sponsored scheme, was launched in February 1992 to provide financial and technical support to major elephant bearing States in the country for protection of elephants, their habitats and corridors.

Findings and Suggestions:

For attaining economic development at a quicker pace India launched a number of economic plans since the adoption of new development strategy after independence. These economic plans have resulted in substantial expansion of agricultural and industrial sector along with the expansion of infrastructural facilities.

But due to poor planning and mismanagement of the economy along with the ruthless exploitation of natural resources, the physical environment of the economy has been totally degraded leading to environmental degradation and ecological imbalance in the country. By ecological imbalance we mean total destabilization of soil, water, climate and biotic factors.

A judicious choice of economic and environmental policies is required to check the damaging effect of environmental degradation.

The most important policy is poverty reduction. Governments need to expand health, family planning and education services that help reduce population growth. Investing in public facilities can greatly help improve the country's environment.

Auxiliary use of electricity, fertilizers, pesticides, diesel, gasoline, gas, irrigation water, etc. leads to their wasteful use and causes environmental problems. Removing or reducing subsidies will bring benefit to the country from all sides.

Lack of property rights over excessive use of resources leads to degradation of environment. This leads to overgrazing of common or public lands, deforestation and over exploitation of minerals etc. Clarifying and assigning ownership titles and tenurial right to private owners will solve environmental problems.

Public awareness and participation are highly effective in improving environmental condition. Public participation can render useful assistance in afforestation, conservation of wildlife, management of parks, improvements of sanitation and drainage system and flood control.

Conclusion

Economic development, which aimed at increasing the production of goods and services to meet the needs of a rising population, puts greater pressure on the environment. In the initial stages of development, the demand for environmental resources was less than that of supply. Now the world is faced with increased demand for environmental resources but their supply is limited due to overuse and misuse. Sustainable development aims at promoting the kind of development that minimises environmental problems and meets the needs of the present generation without compromising the ability of the future generation to meet their own needs

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