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"ENVIRONMENTAL STUDIES TO SUSTAINABLE GROWTH OF NATURE"

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ABSTRACT

Many natural resources found in the world which are fulfill our basic needs. In India some useful natural resources like as much quantity of minerals below the earth surface, evergreen forest lands, fertile soil quality, rivers and tributaries, various ranges of mountains and availability of Indian Ocean etc. Environmental Studies are concerned with a variety of issues, including the protection of natural resources, pollution management, and the influence of a growing human population on the environment. To solve these complex environmental issues, a multidisciplinary approach is necessary. These issues are linked to several sectors such as agriculture, land degradation, economic loss, forestry and deficiency of natural resources. As a result, the Multidisciplinary Nature of Environmental Studies is required to obtain information about these challenges.

KEYWORDS: Environmental crisis, Sustainable development, Progressive education, Historical Geography, Mini-hydel plants.

INTRODUCTION

The environmental crisis is one of the biggest issues of the 21st century. Many organizations and governments have been trying to come up with ways to tackle the ever-increasing challenges that result from the damage done to our environment. They are trying to come up with sustainable ways of development, something which is only possible by engaging with the multidisciplinary nature of environmental studies**.** In the earlier chapters we have discussed the main economic issues faced by the Indian economy. The economic development that we have achieved so far has come at a very heavy price —at the cost of environmental quality. As we step into an era of globalization that promises higher economic growth, we have to bear in mind the adverse consequences of the past developmental path on our environment and consciously choose a path of sustainable development. To understand the unsustainable path of development that we have taken and the challenges of sustainable development, we have to first understand the significance and contribution of environment to economic development. With this in mind, this chapter is divided into three sections. The first part deals with the functions and role of environment. The second section discusses the state of India's environment and the third section deals with steps and strategies to achieve sustainable development. Environment is defined as the total planetary inheritance and the totality of all resources. It includes all the biotic and abiotic factors that influence each other. While all living elements—the birds, animals and plants, forests, fisheries etc.—are biotic elements, abiotic elements include air, water, land etc. Rocks and sunlight are examples of abiotic elements of the environment. A study of the environment then calls for a study of the inter-relationship between these biotic and abiotic components of the environment.

AIM OF STUDY

The study was aimed to save the environment by different harmful pollution and sustainable management of our valuable natural resources for fulfills our requirements.

AREA OF NATURAL RESOURCES

The Deccan Plateau which has good quality of black soil is mostly suitable for cultivation of cotton. In this region textile industries are leading to concentration. The Indo-Gangetic plains — spread from the Arabian Sea to the Bay of Bengal — are one of the most fertile, intensively cultivated and densely populated regions in the world. India's forests, though unevenly distributed, provide green cover for a majority of its population and natural cover for its wildlife. Large deposits of iron-ore, coal and natural gas are found in the country. India accounts for nearly eight per cent of the world's total iron-ore reserves. Bauxite, copper, chromate, diamonds, gold, lead, lignite, manganese, zinc, uranium, etc. are also available in different parts of the country. However, the

developmental activities in India have resulted in pressure on its finite natural resources, besides creating impacts on human health and well-being. The threat to India's environment poses a dichotomy—threat of poverty-induced environmental degradation and, at the same time, threat of pollution from affluence and a rapidly growing industrial sector. Air pollution, water contamination, soil erosion, deforestation and wildlife extinction are some of the most pressing environmental concerns of India. The priority issues identified are (i) land degradation (ii) biodiversity loss (iii) air pollution with special reference to vehicular pollution in urban cities (iv) management of fresh water and (v) solid waste management. Land in India suffers from varying degrees and types of degradation stemming mainly from unstable use and inappropriate management practices.

An environmental study is a multidisciplinary academic field which systematically studies human interaction with the environment. Environmental studies connect principles from the physical sciences, economics, the humanities and social sciences to address complex contemporary environmental issues. It is a broad field of study that includes the natural environment, the built environment, and the relationship between them. There are many Environmental Studies degree programs, including a Master's degree and a Bachelor's degree. Environmental Studies degree programs provide a wide range of skills and analytical tools needed to face the environmental issues of our world head on. Students in Environmental Studies gain the intellectual and methodological tools to understand and address the crucial environmental issues of our time and the impact of individuals, society, and the planet. Environmental education's main goal is to instill in all members of society a pro-environmental thinking and attitude. This will help to create environmental ethics and raise people's awareness of the importance of environmental protection and biodiversity.

FUNCTIONS OF ENVIRONMENT

The environment performs four vital functions (i) it supplies resources: resources here include both renewable and non-renewable resources. Renewable resources are those which can be used without the possibility of the resource becoming depleted or exhausted. That is, a continuous supply of the resource remains available. Examples of renewable resources are the trees in the forests and the fishes in the ocean. Non-renewable resources, on the other hand, are those which get exhausted with extraction and use, for example, fossil fuel (ii) it assimilates waste (iii) it sustains life by providing genetic and bio diversity and (iv) it also provides aesthetic services like scenery etc. The environment is able to perform these functions without any interruption as long as the demand on these functions is within its carrying capacity. This implies that the resource extraction is not above the rate of regeneration of the resource and the wastes generated are within the assimilating capacity of the environment.

In India, air pollution is widespread in urban areas where vehicles are the major contributors and in a few other areas which have a high concentration of industries and thermal power plants. Vehicular emissions are of particular concern since these are ground level sources and, thus, have the maximum impact on the general population. The number of motor vehicles has increased from about three lakh in 1951 to thirty crores in 2019. In 2016, personal transport vehicles (two-wheeled vehicles and cars only) constituted about 85 per cent of the total number of registered vehicles thus contributing significantly to total air pollution load. India is one of the ten most industrialized nations of the world. But this status has brought with it unwanted and unanticipated consequences such as unplanned urbanization, pollution and the risk of accidents. The CPCB (Central Pollution Control Board) has identified seventeen categories of industries (large and medium scale) as significantly polluting.

Worldwide, programs in environmental studies may be offered through colleges of liberal arts, life science, social science or agriculture. Students of environmental studies use what they learn from the sciences, social sciences, and humanities to better understand environmental problems and potentially offer solutions to them. Students look at how we interact with the natural world and come up with ideas to prevent its destruction.

In the 1960s, the word "environment" became one of the most commonly used in educational discourse in the United Kingdom. Educationists were becoming increasingly worried about the influence of the environment on children as well as the school's usage of the environment. The attempt to define the field of environmental studies has resulted in a discussion over its role in the curriculum. The use of the environment is one of the teaching approaches used in today's schools to carry on the legacy of educational philosophy known as 'Progressive education' or 'New education' in the first part of the twentieth century. The primary goal of environmental studies is to assist children in understanding the processes that influence their surroundings so that they do not stay a passive, and often befuddled, observer of the environment, but rather become knowledgeable active mediators of it. The study of the environment can be considered to offer unique chances for the development and exercise of the general cognitive skills that Piaget's work has made educators aware of. Environmental studies are increasingly being viewed as a long-term preparation for higher environmental studies such as Sociology, Archaeology, or Historical Geography.

SUSTAINABLE DEVELOPMENT

Environment and economy are interdependent and need each other. Hence, development that ignores its repercussions on the environment will destroy the environment that sustains life forms. What is needed is

sustainable development: development that will allow all future generations to have a potential average quality of life that is at least as high as that which is being enjoyed by the current generation. The concept of sustainable development was emphasized by the United Nations Conference on Environment and Development (UNCED), which defined it as: 'Development that meets the need of the present generation without compromising the ability of the future generation to meet their own needs'. Read the definition again. You will notice that the term 'need' and the phrase 'future generations' in the definition are the catch phrases. The use of the concept 'needs' in the definition is linked to distribution of resources. The seminal report—Our Common Future—that gave the above definition explained sustainable development as 'meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life'. Meeting the needs of all requires redistributing resources and is hence a moral issue. Edward Barbier defined sustainable development as one which is directly concerned with increasing the material standard of living of the poor at the grass root level — this can be quantitatively measured in terms of increased income, real income, educational services, health care, sanitation, water supply etc.

STRATEGIES FOR SUSTAINABLE DEVELOPMENT

Use of Non-conventional Sources of Energy: India, as you know, is hugely dependent on thermal and hydro power plants to meet its power needs. Both of these have adverse environmental impacts. Thermal power plants emit large quantities of carbon dioxide which is a green house gas. It also produces fly ash which, if not used properly, can cause pollution of water bodies, land and other components of the environment. Hydroelectric projects inundate forests and interfere with the natural flow of water in catchment areas and the river basins. Wind power and solar rays are good examples of conventional. In recent years, some efforts are being taken to tap these energy resources. Collect the details of one such unit set up in your area if any, and discuss in the class.

LPG, Gobar Gas in Rural Areas: Households in rural areas generally use wood, dung cake or other biomass as fuel. This practice has several adverse implications like deforestation, reduction in green cover, wastage of cattle dung and air pollution. To rectify the situation, subsidised LPG is being provided. In addition, gobar gas plants are being provided through easy loans and subsidy. As far as liquefied petroleum gas (LPG) is concerned, it is a clean fuel — it reduces household pollution to a large extent. Also, energy wastage is minimized. To function of gobar gas plant, cattle dung is fed to the plant and gas is produced which is used as fuel while the slurry which is left over is a very good organic fertilizer and soil conditioner.

CNG in Urban Areas: In Delhi, the use of Compressed Natural Gas (CNG) as fuel in public transport system has significantly lowered air pollution and the air has become cleaner. In the last few years many other Indian cities also began to use CNG. Wind Power: In areas where speed of wind is usually high, wind mills can provide electricity without any adverse impact on the environment. Wind turbines move with the wind and electricity is generated. No doubt, the initial cost is high. But the benefits are such that the high cost gets easily absorbed.

Solar Power through Photovoltaic Cells: India is naturally endowed with a large quantity of solar energy in the form of sunlight. We use it in different ways. For example, we dry our clothes, grains, other agricultural products as well as various items made for daily use. We also use sunlight to warm ourselves in winter. Plants use solar energy to perform photosynthesis. Now, with the help of photovoltaic cells, solar energy can be converted into electricity. These cells use special kind of materials to capture solar energy and then convert the energy into electricity. This technology is extremely useful for remote areas and for places where supply of power through grid or power lines is either not possible or proves very costly. This technique is also totally free from pollution. In recent years India is taking efforts to increase the power generation through solar. India is also leading an International body called International Solar Alliance (ISA).

Mini-hydel Plants: In mountainous regions, streams can be found almost everywhere. A large percentage of such streams are perennial. Mini-hydel plants use the energy of such streams to move small turbines. The turbines generate electricity which can be used locally. Such power plants are more or less environment-friendly as they do not change the land use pattern in areas where they are located; they generate enough power to meet local demands. This means that they can also do away with the need for large scale transmission towers and cables and avoid transmission loss.

Traditional Knowledge and Practices: Traditionally, Indian people have been close to their environment. They have been more a component of the environment and not its controller. If we look back at our agriculture system, healthcare system, housing, transport etc., we find that all practices have been environment friendly. Only recently have we drifted away from the traditional systems and caused large scale damage to the environment and also our rural heritage. Now, it is time to go back. One apt example is in healthcare. India is very much privileged to have about 15,000 species of plants which have medicinal properties. About 8,000 of these are in regular use in various systems of treatment including the folk tradition. With the sudden onslaught of the western system of treatment, we ignored our traditional systems such as Ayurveda, Unani, Tibetan and folk systems. These healthcare systems are in great

demand again for treating chronic health problems. Now a day's every cosmetic produce — hair oil, toothpaste, body lotion, face cream and what not — is herbal in composition. Not only are these products environment friendly, they are relatively free from side effects and do not involve large-scale industrial and chemical processing.

Biocomposting: In our quest to increase agricultural production during the last five decades or so, we almost totally neglected the use of compost and completely switched over to chemical fertilizers. The result is that large tracts of productive land have been adversely affected, water bodies including ground water system have suffered due to chemical contamination and demand for irrigation has been going up year after year. Farmers, in large numbers all over the country, have again started using compost made from organic wastes of different types. In certain parts of the country, cattle are maintained only because they produce dung which is an important fertilizer and soil conditioner. Earthworms can convert organic matter into compost faster than the normal composting process. This process is now being widely used. Indirectly, the civic authorities are benefited too as they have to dispose reduced quantity of waste.

Biopest Control: With the advent of green revolution, the entire country entered into a frenzy to use more and more chemical pesticides for higher yield. Soon, the adverse impacts began to show; food products were contaminated, soil, water bodies and even ground water were polluted with pesticides. Even milk, meat and fishes were found to be contaminated. To meet this challenge, efforts are on to bring in better methods of pest control. One such step is the use of pesticides based on plant products. Neem trees are proving to be quite useful. Several types of pest controlling chemicals have been isolated from neem and these are being used. Mixed cropping and growing different crops in consecutive years on the same land have also helped farmers. In addition, awareness is spreading about various animals and birds which help in controlling pests. For example, snakes are one of the prime groups of animals which prey upon rats, mice and various other pests. Similarly, large varieties of birds, for example, owls and peacocks, prey upon vermin and pests. If these are allowed to dwell around the agricultural areas, they can clear large varieties of pests including insects. Lizards are also important in this regard. We need to know their value and save them. Sustainable development has become a catch phrase today. It is 'indeed' a paradigm shift in development thinking. Though it has been interpreted in a number of ways, adherence to this path ensures lasting development and non-declining welfare for all.

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 minimizes 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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