

Environmental Degradation and Sustainable Development in India: Key Issues and Interventions

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Abstract

In the advent of modernisation, the environment has today the highest prices. Especially, in the developing countries like India, where the population is increasing tremendously and the resources are limited, it led to the exploitation of forests and agricultural lands which eventually caused loss of biodiversity. On one hand, poverty and population pressures while on the other hand economic growth and consequently changing consumption patterns came up as a serious threat to the environment.

While the poor depend on the environment for their livelihood, the process of economic development relies upon using natural resources to produce goods and services. The waste generated from consuming and producing these goods and services are in turn released back into the environment impacting it.

The environment not only plays an integral role in healthy living but also, is essential for the existence of life on Earth. Since the environment health is closely associated with the health of human, henceforth, it is important for nations to devise various strategies and methods to prevent environmental degradation. The effects of environmental degradation in the perspective of air, water, land and soil waste pollution and how it would impact human beings, flora and fauna needs to be emphasized. Here comes into play Sustainable Development which not only focuses on environmental issues but also, is a socio ecological process characterized by fulfilment of human needs by maintaining the quality of natural environment indefinitely. The paper gives an insight view of sustainable development accentuating the need for new conceptions of global development that take cognizance of the fact that social and environmental problems are interlinked. It has been acknowledged that the concept of sustainable development is multi-faceted with links to social and cultural aspects and also influence and shapes the economic behaviour, consumption patterns, and longer-term viability and sustainability of our society. **Keywords:** Environment degradation, pollution, sustainable, strategies, development, challenges.

Introduction

“People are always concerned about the planet we are leaving for our kids, but nobody cares about what kind of kids we are leaving for our planet”. The earth has nurtured different species residing on this planet for millions of years.

Though, the resources to be utilised for a healthy living were limited, the ecosystem still retained its carrying capacity due to balanced food webs. With the increasing human advancements in the fields of science and technology, industrialization, urbanization etc. the resources start being exploited. And the current pace at which the depletion of resources is taking place will take earth and the living species to its doom.

The health of human beings is closely connected with health of the environment hence it becomes a necessity to conserve and prevent environmental degradation. It has become the most vicious curses that the modern human race has been suffering due to man's lifestyle based on the exploitation of natural resources. There are several factors which affect the environment like climate change, increasing carbon footprints, depletion of ozone layer, pollution of land, water, air which would prove as catastrophic for the very existence of human race on this planet.

The linkage between the environment and development was globally recognize PED in 1980, when the International Union for Conservation of Nature published the world conservation strategy and used the term “sustainable development”.

The concept came into general usage following publication of the 1987 report of Brundtland Commission, formally the World Commission on environment and development set up by the United Nations

General Assembly.

Sustainable development refers to the development that 'meets the needs of the present generation without compromising the ability of future generations to meet their own needs'. It incorporates various sectors be it environmental, economic or social and using these resources wisely to maintain and improve the quality of life while safeguarding the environment for the generations to come. The utilisation of components of biological diversity should be in such a manner that does not interfere with the natural functioning of ecological processes and life support systems. It includes methods to progress and sustain development which seeks relieve from poverty, introduce equitable standards of living and satisfy basic needs of people. (Brudtland, 1987) For developing nations like India, sustainable development has become the need of the hour.

Environmental sustainability helps to minimise environmental degradation, and to halt and reverse the process they lead to. This involves meeting the needs of humans without endangering the welfare of future generations.

Sustainability requires that human activity only uses nature's resources at a rate at which they can be replenished naturally. An unsustainable situation occurs when the sum total of nature's resources are used up faster than it can be replaced.

The deterioration of local environment would mean that it can no longer sustain human populations to any degree. Such degradation on a global scale could imply extinction for humanity and perpetuating this inequity can only mean a continuing drawdown on the world natural resources and the environment.

It has been widely accepted that meeting the wants of future depends on how well India and the rest of world stabilises their social, economic and environmental goals while making decisions today. Researches carried out under consecutive research framework programs has addressed sustainable development, in particular, and the environmental issues, in general, in a number of different contexts. Therefore, the challenges in making development compatible with the environment is to restructure the economic system in a way that it will not destroy the environment as economy progresses. In this day and age, the major challenges we come across are as follows:

- The ways in which greenhouse gas emissions add atmospheric pollutants affect

climate, ozone depletion, soil and forests.

- The water cycle and soil-related aspects, specially looking at the impact of climate change on the hydro- cycle, interactions between land, ocean and atmosphere, distribution of groundwater and surface water, fresh water and wetland ecosystems, management strategies for water (availability, demand, vulnerability, quality etc.)
- Understanding marine and terrestrial biodiversity
- To minimize the negative impact of human activities, relationships between society, the economy and biodiversity habitats, forecasting potential changes, studying the structures in mechanisms while accessing and managing the risks to biodiversity and ecosystems, as well as looking into conservation, mitigation and rehabilitation options for marine and terrestrial biodiversity.
- Mechanism of natural disasters and desertification such as seismic and volcanic activity - and how these ties in with climate change, land and soil degradation - and studying with science can do to help long -term forecasting of hydrogeological hazards, natural hazard monitoring, mapping and management, to improve disaster preparedness and mitigation strategies. (Jayaraman, 2001)
- Strategies for sustainable Land Management, including integrated coastal zone management and assessment tools for measuring the impacts of agriculture and forestry on the environment, while looking at new technologies and integrated approaches to make these sectors more environmental friendly.
- Systematic operational forecasting and modeling of climate change (atmospheric, terrestrial, marine -based) to improve understanding of extreme events, and to use data coming from the global monitoring for the environment and security programme and other global observation systems for the climate, oceans and terrestrial more effectively.
- Cross cutting issues, such as putting together sustainable development concepts and tools for measuring the sustainability dimension on relevant policies toward sustainable development in a very thorough, practical and meaningful manner.

The environment and sustainable development are affected by certain other factors such as pollution, poverty and illiteracy on the one hand and economic growth and consumption patterns on the other hand in the following way.

1. Pollution: India ranks second after China for being the most populated country in the world while the total landmass covered is 2.4% which makes the population density 324 persons per square kilo meter. The population is further increasing following an exponential growth curve indicating that the large base of population lies in the reproductive age group. The mortality rate has fallen considerably due to improvised health care facilities. Moreover, instead of government framing strict rules 50% of girls marry below the age of 18, resulting in a typical reproductive pattern 'too early, too frequent, too many' (GOI, 2001). Resultantly, the progressing population pressure hampers both the development and environmental health.
2. Poverty: Being a developing nation, another major crisis is the poverty among masses. The low job opportunities and increasing population is the main reason for high incidence of poverty prevailing in India. Since the poor directly depend on environment for their needs, they become both the agents as well as the victims of environmental degradation. They both need and often exploit the environment to survive.

The poor also become victims of pollution. The water resources used by the poor is generally polluted and causes serious ailments like water borne diseases, eye and respiratory diseases and affects the reproductive health.

3. Illiteracy: The scourge of illiteracy significantly affects the environmental and economical setup. It starts with the individual and influences the whole society. The lack of environmental awareness amongst masses has become a serious threat. The inability of people to manage environmental resources like water, soil and forests has created a devastating effect on the environment. Not only it impacts the nature's resources but also, it is correlated with the increasing population pressures since people living in rural areas are unaware about the contraception methods which leads to higher fertility rate.

4. Economic growth: Economic growth means the increase in GDP. The economic growth impacts the environment by increased consumption of non-renewable resources, higher levels of pollution, global warming and the potential loss of environmental habitats. Economic growth is not always harmful for the environment because the individuals with higher source of incomes may contribute to the protect the environment by spending on improved technologies which are environment friendly and reduces the harmful effects of pollution. Economic growth caused by improved technology enables higher output with less pollution.

5. Consumption patterns: Consumption Patterns mean the process by which people purchase and consume products and services to satisfy their needs. Food consumption and production have a considerable impact on the environment as it contributes to climate change, eutrophication and acid rain, as well as the depletion of biodiversity. Consumers are responsible for more than 60 per cent of the globe's greenhouse gas emissions, and up to 80 per cent of the world's water use. Over consumption has caused climate breakdown and increased air pollution. Not only it exhausts the planet's life support systems like the ones that provide us with fresh water but also, leaves us short of materials critical to our health and quality of life.

Looking at severity of the situation, it was decided that there was a need for a new development paradigm. United Nations in the mid of 1980s declared its second and third of its Development Decade's a failure due to their inability to halt the cycle of poverty that subsisted in the World's poorest and slowest developing nations. Moreover, the conditioned loan policies of World Bank and the International Monetary Fund in combination with patterns of development assistance provided through various bilateral and other arrangements succeeded in plunging already impoverished countries into even into deeper debts. All these factors the increasing debt and poverty and slow growing economy cumulatively adds to the human sufferings that already existed in many of the developing nations. So, the need of the hour which the fastest evolving species, human beings, must recognize is that the resources must be utilised wisely or else we will leave an abandoned and barren land for our future generations to come where any human civilization or settlement would take thousands of years to re-establish.

The scientists and researchers recognize the coming crisis and invoke the environmental agencies of different nations to take appropriate preventive measures before we lose which we were once gifted. The concept of sustainable development was given then which suggested the assisted utilisation of resources so that the generations to come may also take the pleasures of environmental richness. The main aim of sustainable development was keeping the balance among

economy, society, technology and environment in terms of regeneration capacity of planet's life ecosystem. It came up as a development paradigm which distinguished the living standards without harming the earth ecosystem or causing environmental challenges such as deforestation, water pollution and air pollution etc. It provided a mechanism to interact with the environment without risking or damaging the resources for the future.

The environment sustainability is related to the ecosystem integrity and carrying capacity. The resources should not be harvested at a rate faster than they can be replenished so as to maintain the dynamic equilibrium of the earth. The rapid elevation in the human population would be advancement in technology, improved healthcare facilities has added to the ever-increasing demands for perpetuation of a healthy living. The reoccurring deforestation associated with the pollution has caused the climate change which has become the most serious threat to the very extinction of humankind on earth. The reason for this gradual shift maybe any, the anthropogenic activities or natural climate variability. Due to the climate change the effects like global warming, melting of glaciers which causes sea level to rise, increasing acidification of oceans etc. have been observed. It not only affects the biodiversity but also, the reproduction cycle of different fauna an affect the migration patterns of the birds. The current rate of biodiversity loss exceeds the natural rate of extinction. (Brundtland, 1987)

The efforts to advance the sustainable development all around the world are being made and the evidences can be observed on climate change, human health and the environment. The governments all across the globe are emphasizing in building and maintaining the green infrastructure and giving recognition to the unique relationship which tribal people have with the natural environment. To ensure progress the government agencies have recently made a commitment to regularly update strategies. Some of the common themes that have emerged in this regard includes:

- In order to stop the increase in the fragility of the climate an effective system which can eliminate pollution of all types and prevent the emergence of new types of pollutants should be devised.
- The multiple factors like deforestation, greenhouse gases, depleting ozone layer etc. which cause the climate change should be managed.
- To encourage the long-lasting biodiversity in the universe all the life forms in nature should be protected.
- To conserve and preserve natural resources of all types, continuous campaign for nurturing man-nature harmony should be organised and awareness should be generated among people of all sections of society.
- There is a need to raise the level of understanding and awareness of sustainable development Issues.
- The policy makers must be provided with the necessary tools for developing better advanced sustainable development techniques.
- There is a current need on building partnerships and creating new ones, providing leadership in areas such as Greening of operations, for stirring innovation and technology and promoting the adoption of sustainable development policies and practices in India and abroad.
- The departments like waste management, water conservation, energy efficiency, vehicle fleet management, land use management and human resource management should be coordinated systematically.

- Eco efficient business practices that conserve energy, eliminate use of toxic materials, and reduce or reuse resources, innovative eco-efficient practices, tools, technologies and products can increase productivity while improving environmental performance.

Sustainable development and Healthy Indians

The quality of life of Indians is intrinsically linked to the health and well-being of their communities. There are several factors including natural, social, cultural and economic on which human health depends. The children, pregnant women add lactating mothers, elderly and tribal people are at a higher risk of being vulnerable. Representative meetings from different sectors should be held to discuss the implications of human health while making decisions for sustainable development. The dialogue should be continued amongst departments to explore information needs, strategies for action and approaches to engage the public in order to protect the health and overall quality of life of our people.

Social and cultural aspects of Sustainable Development

The concept of sustainable development is multifaceted with links to social and cultural aspects such as poverty, diversity, equity, gender and help all these factors do not directly affect the environment but in a way influences and shapes the economic behaviour, consumption patterns and the long-term viability and sustainability of our society. We being at an early stage are facing implications regarding the social and cultural dimensions of sustainable development and understanding the nature of it. Many governmental and private agencies are working together to realise the relationships involved by undertaking the exploratory research and providing social policy perspectives. (Ester, 1993)

Preventive Environmental Policy

The raising concern related to Environmental Quality, natural resources and living organisms forced the government of various nations to adopt certain policies. (WCED, 1987) In India, the protection of Environmental Quality and the sustainable use of natural resources received importance from various official bodies on the basis of international policies in the beginning of 1970.

Law enforcement and other controls

- Consolidate pollution control law: Since air, water and soil linked to each other, the pollution associated with any of them may generate another pollutant like burning solid waste which causes air pollution. Hence stringent pollution laws must be consolidated to address such issues.

- Introduce full liability laws:

Many environmental catastrophes' have been witnessed earlier due to negligence of authorities such as Bhopal gas tragedy where lakhs of people got affected and yet no one took the full liability of the incident and people still await their compensation.

- Mandating cleaner technologies in new Industries: The rise in industrial growth is also an alarming cause for increasing pollution. Moreover, the hygiene standards are below at par in such industries which not only risks the environment but also human health. Hence the investors should not only focus on money making but should also maintain appropriate working conditions by using

cleaner technologies which would reduce pollution as well as health hazards.

The technology for small scale industries can be improved by requiring large scale capital goods manufacturers to produce less polluting equipments.

- Making functioning treatment facilities mandatory: Generally, due to mandatory requirements, effluent treatment plants are set up but not operated to save operating costs. Therefore, strict laws should be made to monitor operations of the facilities.
- Require environmental audits for Industries: Though the environmental impact assessments are framed when the project starts but prescribed environmental management practices are usually not followed which should be made mandatory as soon as the project is underway. Regular audits should be held as a self-monitoring practice and enhancing compliance to standards.
- Enforcement of laws by Pollution Control Boards: Central and state pollution control boards need to invest in strengthening technology at municipality and gram panchayat levels so as to control the elevating pollution levels by installing modern equipment and training, financially with larger budgets to hire better staff and providing better facilities to them.

Conclusively, Sustainable development has become the only alternative to protect and maintain our ecological balance so that our future generation may not get deprived of a rich ecological heritage. As the evolution progresses, the humans have to imbibe the quality of estimated consumption of resources limiting themselves within the carrying capacity of the environment. Various departments need to work in a synchronised way so as to improve the current scenario of environmental degradation. This can be achieved by making efforts related to communication and awareness building amongst countrymen, science and technology Department and staff training. The government has taken initiative to take appropriate measures on current priority areas and effective collaboration are being promoted. New technology should be developed to control pollution levels in the atmosphere. The people living in rural areas should be involved in various governmental initiatives like joint forest management, waste management, recycling and many more so that they can benefit themselves as well as the environment in an eco-friendly way. It is a collective responsibility of every citizen of India to protect their environment which has gifted us home, shelter, food and all other sources of a healthy living. Only by putting in such practices, can we make our earth more habitable for our generations to come.

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