

Sustainable Development: A Key to Human Survival

Bhupinder Singh, Assistant Professor (Environmental Studies)
Department of Basic & Applied Sciences, Bhagat Phool Singh Mahila Vishwavidyalaya,
Khanpur Kalan, Sonapat, Haryana, India

ABSTRACT

It is well known that increasing population, modern agricultural and industrial activities, changing life style and attitude and fall in moral values has put tremendous pressure on environment and natural resources. The loss of biodiversity, air and water pollution, noise pollution, soil erosion and desertification, contaminated food, unsafe drinking water, acid rain, deforestation, depletion and drying of most of the natural water resources, depletion of ozone layer, melting of glaciers, global warming, discharge of toxic wastage by industrial units and automobiles into environment are some of the environmental problematic issues which are also exaggerated due to industrialization and increasing population. Beside this poverty and unequal distribution of resources is also responsible for environmental degradation. It is pertinent to mention here that, the developed nations are having nearly 20% population of the world but are consuming nearly 80% resources of the earth. Whereas developing nations are having nearly 80% population of the world but are consuming only 20% resources of the earth. The rich people are deteriorating the environment due to over consumption while poor people are struggling for basic need. Both these conditions lead to environmental degradation. Hence, it is necessary to aware the public about various issue related to environmental degradation and sustainable development. Environment awareness activities can play an important role to curtail pollution problem and motivate the people to achieve sustainable development. It is need not to mention here that by the later part of 20th century, environmental issues had become a major concern, and the international community realized a need to make people aware about their natural environment and how they can live sustainably. We can overcome these environmental issues by adopting the concept of sustainable development. i.e. development in such a way that fulfilling the requirements of presents generation with compromising the needs of our future generation, environmental protection, conservation of natural resources and equal distribution of resources by adopting the social justice.

Key Words: *Environment, Pollution, Industrialization, Sustainable Development.*

1. INTRODUCTION

The population of the world is increasing day by day and it is really a great challenge for the society to fulfill the basic requirements such as food, drinking water, clothing, employment and shelter to all. All the components of environment i.e. atmosphere, hydrosphere, lithosphere and biosphere are heavily degraded while fulfilling needs of society. Environment is not only a huge area in which human beings are living, but a huge association in which millions of other creatures also live. Environment provides raw material for economic growth and development. The raw material is utilized for the production of different products which ultimately consume as a product. The energy used in production and consumption of these products return to the environment as various types of pollution (Yucel 2004). The economic growth is utmost important for the growth of a nation but it create a lot of environmental issues. The extensive agricultural practices, rapid industrialization and economic growth have resulted in environmental pollution affecting human health (Striessing, Schbpp, and Amann, 2013). It is pertinent to mention here that the excessive consumption of fossil fuels to meet the economic growth has resulted in green house effect which leads to global warming. The Intergovernmental Panel on Climate Change (IPCC) predicted that the world would be face extreme climatic conditions, glacier melting, sea level rise and ocean acidification etc. (Parks 2009). The climate change may have devastating impacts throughout the world. The developing countries including India with 1.35 billion people facing serious environmental issues and disease burden (Chen et al. 2013; Greenstone and Hanna 2014; Dube, Nandan and Dua 2014). The different environmental issues which Indian Republic facing are:

1. Solid waste and its management
2. Air quality issues especially in metro cities
3. Water pollution and potable water quality
4. Soil pollution and degradation of land

5. Deforestation and loss of biodiversity
6. Hazardous and industrial waste management
7. Overpopulation and natural resources related
8. Domestic and industrial waste treatment related
9. Illiteracy, ignorance and lack of awareness
10. Industrial chemicals and global warming

It is well known fact that more than 65% population in India is residing in villages but urban centers and slums are also increasing at an alarming rate which have detrimental environmental impacts. More than 65% people in India earn their livelihood through agriculture sector. Rest of the 35% people depends upon service and industrial sector for livelihood. The various environmental issues caused by agricultural and industrial sectors are briefed below:

1.1 Agriculture and Environment

The 'Green Revolution' increased the crop productivity across the globe and feeds approximately 6000 million people. Green Revolution not only fulfils the basic food needs but also increased the crop yield from the agricultural fields already in use. Moreover, millions of hectares of tropical rain forests were also conserved from alteration to agricultural fields due to enhanced crop production (Toenniessen et al, 2003). Agriculture and agriculture allied sectors are major players in economy of India and approximately 65 -70 per cent of population depends on agriculture for livelihood (Sachdeva, 2007). Agricultural sector contribute nearly 22 per cent of Gross Domestic Product. The first green revolution in India started in 1960 which has changed the agriculture practices pattern of India. Approximately 65 -70% population of country depends on agriculture which is under serious threats from continuous exposure to harmful chemicals like insecticides, herbicides and synthetic fertilizer used in farm practice (Patil & Katti, 2012). Moreover, poisonous creatures like snakes also pose a threat to human life in agriculture. Global cereal production has doubled in the past 40 years due to applications of various mass production technologies such as automation in agricultural machineries, use of synthetic fertilizers, pesticides, irrigation technology and especially the genetic improvement of crops. It is estimated that again agricultural production has to be increased two folds by 2050 due to increase in population. The agricultural production already has great burden on ecology due to excess use of pesticides, synthetic fertilizers and water resources. Hence doubling food and fibre production again at this level will be really difficult task as well as will have more adverse effect on the environment (Tilman, et al, 2002).

1.2 Industrialization and environment

The huge amount of toxic chemicals and wastes which may be biodegradable and non biodegradable is released in to water sources. Beside surface and ground water contamination industrial processes causes a lot of other detrimental impacts e.g. human health, air, noise and soil pollution. Moreover, treatment of industrial effluents and waste of large industrial complexes is a very multifarious method as various byproducts are produced while treating waste. Industrialization is considered essential for economic growth but it is crucial to evaluate its impact on the public and environment or else it may imbalance different types of natural ecosystems affect biodiversity, emission of toxic chemicals, disturb the food chain imbalance, disturbance of self purification mechanism and gaseous emissions.

The unplanned economic and agricultural development leads to unsustainable development i.e. reduction in the sum of environmental capital, human resource capital, or human made capital available to the future generations. Indian Government initiated a lot of economic plans for fast economic development through industrial and agricultural sector after liberty. The aim of these programmes was to enhance the production and to provide livelihood, to eradicate the poverty, to fill the gap between rich and deprived people and to set up a culture based on impartiality and integrity. The aim however, is not achieved due to inadequate planning moreover; these developmental programs degraded our physical environment and depleted natural resources. The environment consists of both biotic and abiotic components i.e. living and non living things. Agricultural and industrial development depends upon these living and non living capitals. The extensive agricultural and unplanned industrial development to meet the economic growth has turned India into dustbin. The unplanned economic development gives rise to the problem of unsustainable development. It has caused:

- Land degradation due to soil erosion, deforestation and chemical residuals etc.
- Ecological degradation due to overgrazing of rangelands
- Land degradation due to water-logging and salinity
- Depletion of underground water table due to overexploitation of ground water
- Destruction of habitat by modern agricultural and industrial activities

- Environmental problems arising out of indiscriminate mining
- Atmospheric pollution due to uncontrolled industrialization and automobiles

Thus, to overcome these environmental issues we have to adopt the concept of sustainable development.

2. MEANING OF SUSTAINABLE DEVELOPMENT

Sustainable development is not a new concept in Indian context as our ancestors' knows the importance of nature. According to Indian mythology all the components of nature are made up of five basic elements namely earth, sky, air, water and fire. The balance of all the five components is necessary for proper functioning of the environment. If any component from these five basic elements disturbed, it create problem and harm the humanity. Hence, since ancient time it is in our culture to give regard every creature and every component of environment. It is defined as 'developing in such a way that fulfilling our needs without compromising the ability of future generation to meet their own need'. This definition was given by G. H. Brundtland in 1987, the then Director of WHO. Actually in the name of economic development we have degraded the environment and depleted natural resources at very fast rate and this may be called as destruction. To protect the rights of future generations we have to develop sustainably, which is characterized by equitable distribution of resources and benefits among all the stakeholders. Sustainable development considers not only financial benefits but also considers community and ecological principles while planning; resources and benefits allocated equitably without discriminating the gender, race and society. Moreover, sustainable development implies the continuous supply of resources for present and future generation i.e. development without destruction along with preservation of natural resources for future. Hence, in nut shell sustainability concept can be classified as follows:

- A sustainable state is one in which resources continuously available not only for present but also available for future generation i.e. intra and intergenerational equity.
- A sustainable state is one in which resources are distributed fairly and equitably among various sections of present generations i.e. between rich and poor people.
- A sustainable state is one in which resources are utilized as per their carrying capacity and emphasis must be given to ecosystem stability.

3. KEY COMPONENTS OF SUSTAINABLE DEVELOPMENT

It is clear from preceding section that economic development which takes care of the environment and society is known as sustainable development so, its key components are:

- Financial i.e. economic growth and development
- Societal i.e. equitable distribution of resources and social justice
- Environmental i.e. prevention of the environmental degradation.

We can conclude that these components must be integrated in a balance way so that present and future generates may enjoy the nature and fulfill their needs.

4. PRINCIPLES OF SUSTAINABLE DEVELOPMENT

The concept of sustainable development based upon various basic principles, which are:

- Designing according to nature i.e. developing in such a way which does not harm the environment or we can say eco-friendly development.
- The resources should be utilized in such a way that not only present but future generations also meet up their requirements.
- The production by natural system and consumption by human society are systematic associated with each other.
- Clean and healthy environment is utmost important for acquiring healthy economy through sustainable development.
- The excessive exploitation of natural capital may leads to successful and sound economic development.
- That the past practice of immediate short term economic gain by degrading environment should be prohibited.
- That the only development should not be the target, it should also have goals regarding societal development.
- That the sustainable development considers all the necessary aspects which are essential for human survival e.g. healthy ecosystem, ecology, natural resources, institutions, community and their services etc. h their services, institutions and other aspects of social organization.

- That the sustainable development needs dual action namely individual level and at society and community level. In another words it can be concluded that before changing the system and society we have to change ourselves.
- That the sustainable development insures the adequate employment for poor and deprived section of society along with guarantee of fulfillment of basic necessities.

5. FUNDAMENTALS OF SUSTAINABLE DEVELOPMENT

- Stabilization of human population especially developing countries
- Developing new and sustainable technology and sharing of them
- Using the natural resources as per their carrying capacity
- Promoting education along with environmental awareness
- Using appropriate technology to use extract resources
- Pollution prevention and minimization of waste
- Implementation of environmental management systems
- Refinement of the economic/financial system
- Changing attitude and behavior of the society
- Changing social and cultural beliefs

6. HURDLES FOR SUSTAINABLE DEVELOPMENT

- Exponential increase in population along with population density
- Overexploitation of resources beyond their regenerative capacity
- Low economy/growth rate especially of developing countries
- Overexploitation of non- renewable energy resources
- Pollution and environmental degradation
- Deforestation and Loss of biodiversity
- Illiteracy, ignorance and attitude

7. ENVIRONMENTAL CHALLENGES AND SUSTAINABLE FUTURE

The economic development of a country depends upon the regular flow of natural resources i.e. sustainable supply of commodities and services are required for development. The humanity is facing various environmental issues throughout the world e.g. safe drinking water and sanitation, environmental pollution, acid rain, global warming and climate change, loss of biodiversity, depleting energy resources, industrial and rural development and many more. The people of develop countries polluting more due to their affluent lifestyle while developing countries pollute due to huge population and ignorance. The guarantee of livelihood and good incentives to marginal and poor people in developing countries may play an important role curtailing pollution and restoration of environment. The governments have to revise policies to achieve good economic growth in developing nations along with good market incentives. The general public, students, officials, industrialist, women and leaders should be sensitize about importance of natural resources, consequences of increasing population, depletion of natural resources, environmental pollution and degradation etc.

It is well known fact the mare than 75% human population i.e. approximately 550 billion people residing in under developed countries. These countries have more burdens of diseases due non availability of safe drinking water and sanitation services. On the other hand developed countries have less population but they have polluted more due to their life style. The overcome the environmental issues promotion of environmental literacy is a most important and viable solution. The various religions throughout the world have different belief about the importance of nature. Earlier people lives in harmony with nature and worship it but consumerism has created the issues of environmental degradation e.g. Indian pay regards to nature and worship animals, birds, plants, trees, rivers and mountains etc. We have to motivate the people for participation in environmental awareness programs like pollution prevention, conservation of natural resources, changing attitude and life style etc. It is pertinent to mention here that Earth Summit held at Rio-de-Janeiro in 1992 and World Summit held at Johannesburg in 2002 have attracted the interest of common man throughout the world regarding the importance of environment and ill impacts of pollution.

CONCLUSIONS

Environmental Education (EE) can play a very important role to overcome the various environmental problems. A lot of countries throughout the world have implemented the concept of compulsory environmental education to

create environmental awareness among the population at formal and non formal level e.g. The environmental awareness programs like pollution prevention and conservation of natural resources may be initiated from school level to community level which helps to change the attitude of people. Indian Supreme Court had directed the Central Government to make all the educational curriculum environmentally oriented. The various apex bodies namely National Council for Educational Research and Training (NCERT), All India Council for Technical Education (AICTE) and University Grants Commission (UGC) were directed to design a core module syllabus and common curricula regarding environmental education. Actually environmental education consists of five main components namely awareness, knowledge, attitude, skill and participation. Awareness make a person sensitized about environmental issues; knowledge helps in achieving basic understanding about environment; attitude brings strong feelings and morals about environmental issues; skill means ability to resolve the issue and participation helps in developing sense of responsibilities. All the five components of environmental education have their own roles in resolving the environmental problems at individual and community level. The environmental education has to be implemented from school to university and community level so that all the stakeholders of the society may be sensitized. Moreover, environmental concerns may be enlightened through formal, informal and non-formal education for sustainable development. In nut shell it can be concluded that we have degraded the environment and now it is our collective duty to restore the environment. In the process of evolution we have developed at last so it is our moral duty to worship the nature, conserve natural resources and other creature on earth. We have to use resources judiciously and equitably so that all the poor also have right to use these. Enforcement of law is not the only solution to combat environmental degradation, pollution and climate change etc. It is impossible for any nation to succeed in environmental restoration program without the participation of community. Hence, environmental literacy is the most important and simple way to aware the people about environmental issues. We have to remember that once, Mahatma Gandhi had said “The earth provides enough to satisfy every one’s needs, but it cannot fulfill anybody’s greed”.

REFERENCES

1. Yucel, (2004). “Surdurulebilir Kalkinmanin Saglanmasinda Cevre Korumanin ve Ekonomik Kalkinmanin Karsitligi ve Birlikteligi”, Cukurova Universitesi, Sosyal Bilimler Enstitusu Dergisi, Sayı: 11.
2. Sachdeva, S (2007). Pesticides and their socio-economic impact on agriculture. South. Econ., 41(38): 42-53.
3. Toenniessen, GH, John C O’Toole and Joseph De Vries (2003). Advances in plant biotechnology and its adoption in developing countries, Current Opinion in Plant Biology 2003, 6:191-198
4. Dhanraj A. Patil and Ravasaheb J. Katti (2012), modern agriculture, pesticides and human health : a case of Agricultural labourers in Western Maharashtra, Journal of Rural Development, Vol. 31, No. (3) pp. 305 – 318 NIRD, Hyderabad.