UNIT 6: SUSTAINABLE DEVELOPMENT

UNIT STRUCTURE

6.1 Learning Objectives
6.2 Introduction
6.3 The Concept of Sustainable Development
6.4 Indicators of Sustainable Development
6.5 Various Acts for Protection and Preservation of the Environment
6.6 Let Us Sum Up
6.7 Further Reading
6.8 Answers to Check Your Progress
6.9 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to-

- understand the concept of sustainable development and some related issues
- explain the history of the emergence of Sustainable development
- discuss the provisions and significance of the acts, which are related to the protection of environment like water prevention and protection act, wild life protection act etc
- analyse the importance and applicability of the concept of sustainable development in the contemporary times.

6.2 INTRODUCTION

We have already learned in this previous units that man has been continuously been changing the forms and modes of his interaction with the environment. Secondly, human population on earth is increasing and simultaneously the technological revolution and developmental activities have accelerated in such a manner that they have threatened the environment. The degradation of environment due to developmental activities and industrial and other discharges into atmosphere and hydrosphere has caused great

concern and has given rise to the concept of sustainable development. Sustainable development has been initiated with the concern for the environment. However, in recent times, it has been enriched with an economic and a social dimension. In the beginning, sustainable development was meant to be the solution to the ecological crisis caused by heavy industrial exploitation of resources and continuous environmental deterioration. Its main goal was to preserve the quality of the environment. At present, the concept of sustainable development also embraces the quality of life both from the economical and the social perspectives.

Sustainable development is a concept based on the integration of economic, environmental, and social concerns. Environmental protection responds to the single goal of trying to preserve environmental quality. Sustainable development, however, is more complex. It recognizes that social and cultural factors play an important role in sustainable development, in addition to economic and environmental factors. It, as well, it seeks to ensure quality of life over the long term. In this unit, we shall discuss in details the concept of sustainable development.

6.3 THE CONCEPT OF SUSTAINABLE DEVELOPMENT

Before going to the core meaning of the concept of sustainable development, let us give a brief history of the emergence of the concept of sustainable development. The concept of sustainable development has a long historical background. In ancient Indian writings, 'nature' has been considered as the controller of all human activities. They accorded the status of the almighty God to all the components of environment like air, water etc. Inspite of the fact that there was no need for conservation, the concept of their protection has been put forward by all religions of India. In Greek writings, there is a reference of Ge as the Goddess of Earth-the mother figure of natural replenishment. In fact, that was a time when population was limited and there was mutual adjustment between man and environment. It was only after the industrial revolution followed by transport revolution and

urbanization that degradation of environment started,which gave rise to the concept sustainable development.

Sustainable development as a concept has materialized during decades, within the framework of thorough international scientific debates, and has assumed political potential through globalisation. Concern about environment as a central issue in the development began to grow in the 1960s and the 1970s. The idea was again incorporated into development and environment debates by international organizations.It is important to mention here that the idea of sustainable development was pushed effectively by scientists like Sir Julian Huxley, first director of UNESCO.

The relationship between mankind and the environment became a matter of great concern for the international community at the first United Nations Conference on the Human Environment (Stockholm, 1972). Then, in the year 1981, the concept of "sustainable development" appeared for the first time. It was enshrined in the title of a key document -World Conservation Strategy: Living Resource Conservation for Sustainable Development, published by the International Union for Conservation of Nature and Natural Resources (IUCN), the World Wildlife Fund (WWF) and UN Environment Programme (UNEP). According to the Strategy's definition, "for development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long term as well as the short term advantages and disadvantages of alternative actions" (Starke 1990: 8-9).

In 1983, the United Nations set up the World Commission on Environment and Development (WCED) headed by Gro Harlem Brundtland, Prime Minister of Norway, as an independent body. Its objective was to re-examine the critical environment and development problems on the planet and to formulate realistic proposals to solve them and to ensure that human progress will be sustained through development without bankrupting the resources of the future generations. The WCED published its report titled "Our Common Future" inthe year 1987. This conference is usually considered as a watershed in the emergence of sustainable

development.The Commission Report, entitled Our Common Future, was presented by G. H. Brundtland in 1987 and provided the first accepted (and often quoted) definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

The central principles behind sustainable development are equity and fairness among countries and generations, the long-term vision on the development process, systemic thinking and interconnection between economy, society and the environment.

Four key objectives that have been established based on the major principles of sustainable Development are as follows:

- Environmental protection through measures that allow the separation of economic growth from negative environmental impacts;
- Social equity and cohesion through observance of fundamental human rights, cultural diversity, equal chances and elimination of all forms of discrimination;
- Economic prosperity through the promotion of knowledge, innovation and competitiveness with an aim to ensure higher living standards and full high-qualityemployment;
- Meeting EU's (European Unions) international responsibilities through the promotion of democratic institutions in the interest of peace, security and freedom and of the principles and practices of sustainable development.

Sustainable development is linked with the concept of quality of life and pursues three objectives: economic welfare, social stability and environmental protection.

- Economic welfare: It aims at generating a maximum income flow through maintaining the capital that has brought benefits;
- Stability of social and cultural systems:It ensures the human capital that is necessary for any form of development, reducing destructive conflicts;

- Environmental protection: Sustainable development aims at preserving the biological and physical stability of natural systems.

The minimal requirements for sustainable development are the following:

- Redimensioning economic growth for reasonable resource allocation and high production quality;
- Poverty eradication through meeting the essential needs of the population: job, food,energy and water supply, a place to live in and health;
- Acceptable population growth (controlled demographic increase)
- Natural resource preservation and increase through maintaining ecosystem diversity and monitoring the impact of economic activities upon the environment;
- Technological shifting and the control of technological resources;
- Government decentralization, active involvement in the decision-making process;
- Corroborating national and international decisions regarding environment and development;
- Global unification of decisions on the environment and economy.

The main concern of sustainable development strategy is the human community inspace and time and the creation of a cohesive system that is able to cover the costs generatedby economic-social growth, pollution prevention and its negative effects.

6.4 INDICATORS OF SUSTAINABLE DEVELOPMENT

Two classes of metrics are in development to indicate the state and performance of the system which are popularly known as indicators. It has been already mentioned that sustainable development is multidimentional as it covers economic, environmental and socio-cultural aspects. Therefore the indicators of sustainable development are also vast. Researchers have attempted to measure improvements in terms of three groups of indicators corresponding to the three aspects of sustainability.We have different

indicators for each and every aspect of sustainable development like eco-efficiency metrics, socio-ecological metrics and socio-economic metrics. Three dimensional metrics can be obtained from the intersection of all three aspects which could be called true sustainability metrics.

Energy is the prime driver of economic growth and if non renewable always has an ecological impact through the emission of pollutants and greenhouse gases, and, since limited does affect future generation. It would appear that non renewable energy is inherently a three dimensional indicator. Pollutant dispersion is a three dimensional indicator as it represents environmental impact, has economic cost associated with it and frequently has a bearing on the health of the people and eco system of the neighborhood of the manufacturing units. The cost of manufacturing is a reflection of the nature of technology and affordability for public consumption (societal value), thus socio-economic indicator.

As we have learned that the aim of sustainable development is to maximize human well being or quality of life without hampering the life support system,the measures of sustainable development may be different in developed and developing countries according to their level of technological and economic development. Developing countires like India can focus attention on following measures.(Saxena, 2006).

- Ensure clean and hygiene, i.e., living and working conditions for the people.
- Sponsor research on environmental issues pertaining to the region.
- Ensure safety against known and proven industrial hazards.
- Encourage afforestation. Ensuring environmental education as a part of school and college curriculum;
- Encourage use of non-conventional source of energy
- Need for socialization and humanization of all environmental issues.

6.5 VARIOUS ACTS FOR PROTECTION AND PRESERVATION OF THE ENVIRONMENT

In this section, let us discuss about the various Acts and Provisions that have been implemented for the protection and preservation of the environment:

- **Environmental (Protection) Act, 1986 :** This act was passed by Indian Parliament in order to fulfill constitutional obligations as provided under article 48 A and also to show its commitment towards Stockholm declaration of 1972, in which it was suggested that all governments must evolve necessary laws to protect and improve the flora and fauna, non -renewable resources, wildlife and human health.The world community's resolve to protect and enhance the environmental quality found expression in the decision taken at the United Nations Conference on Human Environment held in Stockholm in June 1972. The government of India participating in the conference strongly voiced the environmental concerns.While several measures have been taken for environmental protection both before and after the conference, the need for a general legislation to further implement the decisions of the conference has become increasingly evident.

This act is a special law that extends to the whole nation . It was passed in March 1986 and came into force on 19th November 1986. The act consists of 26 sections divided into four chapters. Seven schedules dealing with emission standards of air, noise effluents etc. have also been appended to it. Various rules including the Environmental Protection rules have been provided with it. They are as follows:

- Hazardous Wastes (Management and Handling) Rules 1989
- Hazardous microorganism Rules
- Manufacture, Storage and Import of Hazardous Chemicals rules, 1989
- Chemical Accidents (Emergency Planning, Preparedness and Response), Rules 1996
- Bio- Medical Water (management and Handling Rules)

- Municipal Solid Wastes (management and Handling) rules 2000.
- Recycled plastic manufacture and usages rues 1999
- Noise pollution (regulation and Usages rules)1999

In addition , according to Section 2(a) of the act, environment includes: Firstly Water air and land, secondly the interrelationship which exists among and between water, air, land, human being,living creatures,plants and micro-organisms including property. Thus,it includes both animate and inanimate objects and their interrelationship.

Let us now come to section 2 (b, c, d) which discusses some important concepts. According to Section 2 (b) "Environmental pollutant" means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be injurious to environment".And2(c) defines environmental pollution as the presence in the environment of any environmental pollutant.

Further Section 2 (d) is about 'handling', in relation to any substance, means the manufacture, processing, treatment, package,storage,transportation,use, collection,destruction, conversion,offering for sale ,transfer or the like of such substances.

Section 3 is about power of central government to take measures to protect and improve environment; Section 4 authorises central government to appoint offices with proper designation; and Section 5 empowers the central government to issue direction to any person/officer/appointed under section 4 of the act.

Sections 7-17are related to prevention, control and abatement of environmental pollution.

After going through the provisions of this Act, it can be said that this act is a comprehensive document on environment protection in India (Saxena 2006).

- **Water (Prevention and Control of Pollution) Act, 1974:** The main objective of this Act of 1974 is to maintain or restore the wholesomeness of water and to prevent, control and abate water pollution. To achieve this, the act has provided various provisions, which are very comprehensive.The

sub section 2 (e) with sections 17 and 18 of this act, the fundamental objective of the statute is to provide clean water to citizens. Section 2 of the act has also defined certain basic terms used in the act. The act defines water pollution as follows:

"Pollution means such contamination of water or such alternation of physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substances into water as may or is likely to , create a nuisance or render such water harmful or injurious to the public health or safety, or to domestic, commercial,industrial, agricultural or other legitimate uses or to the life and health of animals or plants of aquatic organism" (section 2e).

Therefore, water pollution implies

- Contamination of water
- Alteration of physical chemical or biological properties of water
- Discharge of sewage or trade effluent or
- Any other solid,liquid or gaseous substances, which may or likely to create a) nuisance b) render such water harmful to public health, to domestic , commercial, industrial, agricultural or other legitimate uses.

In addition the act has used two terms in relation to water pollution. The stream here includes a) river b) water courses c) inland water d)subterranean water and e) sea water.

- **Air (prevention and Control of Pollution) Act, 1981:** This act was passed by Indian Parliament under article 253 of the Indian constitution. The major aims and objectives are as follows:

It is well known to us that India has participated at UN Conference on Human Environment held at Stockholm in 1972 to take appropriate steps for preservation of natural resources which also includes the preservation of quality of air. Therefore the Act of 1981 aims to achieve the following objectives:

- To provide for the prevention, control and abatement of air pollution;

- For the establishment of Board with a view to carry out the above-mentioned purpose.
- To confine on and assign to such board powers and functions relating to prevention, control and abatement of air pollution and other matters connected thereof.
- To lay down the standard to maintain the quality of air.

The term 'air pollution' refers to the presence of any pollutant in the atmosphere. Air pollutant like water pollutant refers to the presence of any solid, liquid or gaseous substance present in atmosphere in such concentration that may be or tend to be injurious to human being including other living creatures. Let us give some examples: smoke, soot, fly ash, suspended particle matter, noise, radio active substance etc.

Sections 3- 15 of this act provide for the constitution of a Board , qualifications of its members, terms and conditions of their services, meetings, vacations of seats, and temporary association of persons with the board.

- **Wildlife (Protection) Act, 1972 :** In the year 1972 Indian parliament passed another significant national law, the Wild Life protection act of 1972 with the objective of protecting wildlife.Apart from prohibiting hunting, it has created protected areas and controls trade in wild life products. For the successful achievement of its objectives, the act has created aseparate and independent authority to protect and improve wildlife. Some important purpose of this act are as follows:

- Protect the habitat of wild animals for which various national sanctuaries have been established.
- Some special provisions to preserve endangered species.

  Hunting of wild animal has been prohibited but the chief wildlife warden has been authorized to grant permission to hunt under some circumstances like when wild animal become dangerous to human life, is disabled and diseased or beyond recovery. The act has made certain provisions to protect specified plants of sanctuaries,national parks, forest or areas specified by notification. All the specified plants or parts have been therefore declared to be property of the state government.

The act also prohibits to:

- Willfully pick up , uproot, damage, destroy, acquire or collect or
- Possess, sell, offer for sale, or transfer by way of gift or transport any specified plants whether dead or alive.

- **Forest (Conservation) Act 1980 (with amendment made in 1988):**

The forest conservation act was passed by Indian Parliament on 25 0ctober, 1980 to provide for the conservation of forests and matters connected therewith or ancillary or incidental thereto. This law was extended to the whole of India except the State of Jammu and Kashmir.However, the act was amendedin 1988. The act of 1980 is a unique piece of legislation,and a regulatory mechanism that reflects the collective will of the nation to protect its rich biodiversity and natural heritage and that permits only unavoidable use of forestland for various development purpose. It embodies the firm commitment of the Government of India to balance the conservation of forest with sustainable development need of the country contributing to better environment, health and economy.

In order to protect the environment, the act puts restrictions on the de-reservation of forests or use of forestland for non-forest purpose. State government or any other authority even cannot make except with the prior approval of the central government, any order directing

- That any reserved forest (within the meaning of expression "reserved forest" in any law for the time being in force in a state) or any portion thereof, shall cease to be reserved.
- That any forest land or any portion thereof may be used for any non forest purposes.
- That any forest land or ant portion thereof may be cleared of trees which have grown naturally in that land , for the purpose of using it for afforestation.

Section 3(A) of the act also clearly menions the penalty for the contravention of the provisions of the act. In addition the act also conferred power upon central government to make rules for carrying out the provisions of the act.



CHECK YOUR PROGRESS:

Q1: Define Suatainable Development.

Q2: What do you meant by sustainable development indicators?

Q3: Mention major objectives of sustainable development.

Q4: Mention two minimal requirements for sustainable development.

Q5: Is sustainable development multidimensional?

Q6: In which year The Forest Conservation Act was passed?

Q7: Mention two objectives of Water Prevention and Control of Pollution Act?



6.6 LET US SUM UP

- Sustainable development is a concept based on the integration of economic, environmental, and social concerns.
- The central principles behind sustainable development are equity and fairness among countries and generations, the long-term vision on the development process, systemic thinking and interconnection between economy, society and the environment.
- The Commission Report, entitled Our Common Future, was presented by G. H. Brundtland in 1987, provided the first accepted definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet heir own needs"
- Sustainable development is linked with the concept of quality of life and pursues three objectives : economic welfare, social stability and environmental protection.
- Two classes of metrics are in development to indicate the state and performance of the system which are popularly known as indicators.

- Sustainable development is multidimensional as it covers economic, environmental and socio-cultural aspects. Therefore the indicators of sustainable development are also vast.
- In order to show commitment towards Stockholm declaration of 1972, in which it was suggested that all governments must evolve necessary laws to protect and improve the flora and fauna, non - renewable resources, wildlife and human health, the government of India came up with acts like Environmental Protection Act, Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act 1981, Wildlife Protection Act and Forest Conservation Act.
- Environmental Protection Act was passed in March 1986 and came into force on 19th November 1986. The act consists of 26 sections divided into four chapters. Seven schedule dealing with emission standards of air, noise effluents etc. have also been appended to it. Various rules including the Environmental Protection rules have been provided with it.
- Water (Prevention and Control of Pollution) Act, was passed in 1974 with an objective to maintain or restore the wholesomeness of water and to prevent, control and abate water pollution.
- This act was passed by Indian Parliament under article 253 of the Indian constitution mainly to provide for the prevention control and abatement of air pollution;of course it has many more objectives related to the protection of air.
- In the year 1972 Indian parliament passed another significant national law, the Wild Life protection act of 1972 with the objective of protecting wildlife which has also created protected areas and controlled trade in wild life products.
- The forest conservation act was passed by Indian Parliament on 25 0ctober, 1980 to provide for the conservation of forests and matters connected therewith or ancillary.



6.7 FURTHER READING

1) ArturPaw?owski 2007.How Many Dimensions Does Sustainable Development Have?In Wiley Inter Science (www.interscience.wiley.com).

2) Orboi, Manuela-Doraetal. "Sociological Dimension of Sustainable Development" Research Journal of Agricultural Science, 42 (3), 20

3) Saxena , H.M.2006 . Environmental Studies.

4) Sikdar, Subhas. K .2003 Sustainable Development and Sustainability Metrics.in AISHE Journal, vol (49) , No.8.



6.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: Sustainable development refers to the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

Ans to Q No 2: Two classes of metrics are in development to indicate the state and performance ofthe system, which are popularly known as indicators of sustainable development.

Ans to Q No 3: The main objectives of sustainable development are as follows: economic welfare, social stability and environmental protection.

Ans to Q No 4: Two minimal requirements for sustainable development are : a) Redimensioningeconomic growth for reasonable resource allocation and high production quality; b) Poverty eradicationthrough meeting the essential needs of the population: job, food, energy and water supply, a place to live in and health;