
UNIT 3 SUSTAINABLE DEVELOPMENT: AN INTRODUCTION

Structure

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3.1 INTRODUCTION

The concept of sustainable development has arisen from a worldview which sees the survival, progress, and continued maintenance of the human community as dependent on the continued health and viability of the earth's life support systems. The word sustainable development refers to a model of human development in which equal thought and preference is given to the future generations while meeting the human needs. It also implies the processes of fundamental change in our social system and institutions, where the preference for future generations has been included at individual and societal level. This change in attitude from present visible issues to an invisible future imagination is based on a deep realization and social awakening concomitant with the expansion of globalization. It is paradoxical that this change relates to addressing the challenges embedded in the new global awareness that the earth is finite, and all of the planet's life support systems including social and economic systems are globally interconnected and interdependent. Sustainable development is a central concept for our age, and it is both a way of understanding the world and a method for solving global problems.

The world is perplexed at the grave population explosion, which continues to multiply rapidly, by around 75 to 80 million people per year. We have already reached to almost 8 billion in 2021, and perhaps would reach 9 billion by the early 2040s. Now, these billions of people are looking for their foothold in the world economy. While the poor are still struggling to find the food, safe water, health care, and shelter they need for mere survival. The struggle is unending for those just above poverty, who are continuously trying for improved prosperity and a brighter future for their children. The privileged high-income society is confident that technological advances will offer them and their families even higher levels of wellbeing. This unending race for better living, comfortable life and growing big monetarily has gradually depleted the resource base and eroded the social fabric of community living based on mutual sharing of the resources. The impact

of these changes has finally forced the world to think for the survival and continuity of the human civilization, and thus the discussions and actions started for sustainable development.

In this unit you will know more about the concept of sustainable development, which simply stands for meeting the needs of present generations without compromising the ability of future generations to meet their own needs. In other words, it means a better quality of life for everyone presently, and for generations to come. Sustainable development is a vision of progress which integrates the immediate needs of the society and also addresses the future objectives of local and global action, to balance the social, economic and environmental change which are inseparable and are interdependent components of human progress.

After studying this unit, you should be able to

- explain the meaning of sustainable development
- describe various components of sustainable development
- discuss various indicators of sustainable development
- suggest few measures for the promotion of sustainable development.

3.2 DEFINITION AND CONCEPTUAL UNDERSTANDING

The concept of sustainable development arises from a worldview, which sees the survival, continued progress, and maintenance of the human community as dependent on the continued health and viability of the earth's life support systems. The term "sustainability" is derived from the Latin root *sus-tinere*, which means to "under-hold" or hold up from underneath, implying robustness and durability over time. Accordingly, sustainability depicts a paradigm that seeks to protect the planet's life support systems to ensure longevity for humans and other species. Sustainable development can be defined as the process of strategic changes in our social systems and institutions needed in order to achieve sustainability. The term "development" is criticized by some as connoting growth. Unfettered growth of the "ecological footprint" of the human population, defined as the portion of the biosphere used to support human production, consumption and waste, is, of course, ultimately not sustainable.

Sustainable development is defined as balancing the fulfilment of human needs with the protection of the natural environment so that these needs can be met not only in the present, but in the indefinite future. Sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment. The field of sustainable development is conceptually divided into four general dimensions: social, economic, environmental, and institutional. The first three dimensions address key principles of sustainability, while the final dimension addresses key institutional policy and capacity issues.

The term, sustainable development, was coined by the Brundtland Commission which defines sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs". When the Brundtland Commission

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published Our Common Future, it ignited worldwide attention to the concept of sustainable development. The Brundtland report defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The report adopted the perspective that economic inequities will lead to over-exploitation of resources, and economic growth is needed in the poorer countries in order to satisfy basic human needs, but that this development must follow a “new pathway” that does not entail environmental destruction. It also noted that meaningful political participation is needed to ensure that the fruits of economic growth are equitably distributed.

The Brundtland report proposed a number of new ways for achieving sustainable development. It also led to the 1992 United Nations Conference on Environment and Development (UNCED) (commonly called the Earth Summit) held in Rio de Janeiro. The fruits of the Conference included Agenda 21, the Rio Declaration, the United Nations Framework Convention on Climate Change, the United Nations Convention on Biological Diversity, and the Statement of Principles for the Sustainable Management of Forests, all of which were adopted by the 178 governments that attended the Conference.

Now, sustainable development has become a buzzword, and is used extensively in all kinds of seminars, workshops, symposium and conferences. The concern for sustainable development is becoming increasingly louder with the increasing pace of economic and industrial growth. In fact, all sectors of developing countries seem to be vibrating with economic buoyancy. There is expansion of trade, investment, market, and increase in Gross National product (GNP), productivity, per capita income, profit, efficiency, salary, etc, across the globe. The free trade system could more tellingly be called the free ride system, because the producers do not have to include in their product costs all the indirect costs they cause society, such as pollution of the land, sea and air, ozone holes, disappearing topsoil, exploding health costs, allergies, global warming, destruction of species, pesticides in food, antibiotic-resistant bacteria, crime, unemployment, escalating social costs, etc. Many of the most common, and most damaging products on the market, would never be manufactured if they were priced at their real costs to society as a whole.

You have read about definition and conceptual understanding. Now, answers the questions in Check Your Progress 1

Check your Progress 1

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1. What is the need for sustainable development?

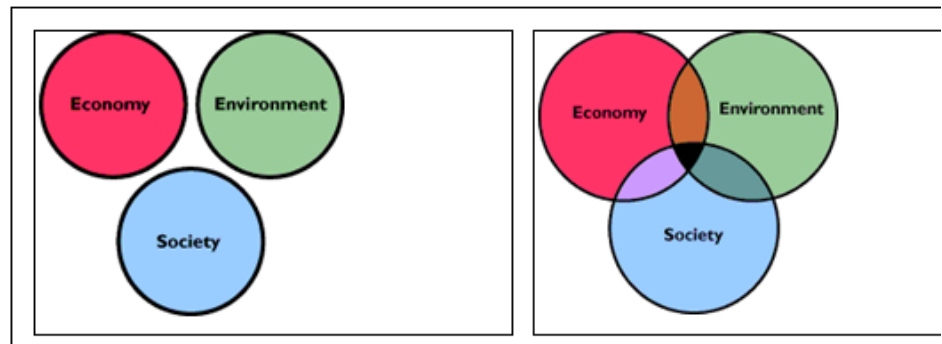
2. What do you mean by sustainable development?

3.3 FUNDAMENTALS OF SUSTAINABLE DEVELOPMENT

The available research and analysis of sustainable development components shows the existence of three major components, which is economical, ecological and human. The economic potential of sustainable development changes very slowly, while the human component or the socio economic development changes very fast. It has been observed that rapid economic growth in order to obtain maximum benefits, especially for developing countries, creates a heavy burden on the ability of our planet to support. Therefore, economic growth should be such that negative environmental impact is limited. Hence, the concept of sustainable development represents a paradigm shift, where development must be conceived as a multidimensional activity with major changes in social structures, attitudes and national institutions, aiming at accelerating the economic growth and reducing inequality. In other words, the economic dimension should aim to ensure a balanced and sustainable economic environment.

The ecological component of sustainable development suggests that economic development should be in conformity to the environment. Environmental development is the capacity of the environment to grow and to bring the peculiarities of environment while ensuring the protection and renewal of natural resources and environmental heritage. Thus, economic growth should not affect the environment in order to talk about sustainable development. When society, economy, and environment are viewed as separate, unrelated parts of a community, the community's problems are also viewed as isolated issues. This piecemeal approach has a number of negative side effects. Sustainable development is deeply linked between the economy, the environment and the society. The figure shown below is frequently used to show the interconnectedness of economy, environment and the society. The understanding of the linkages between these three parts is the vital key to understanding sustainability, because sustainability of the three systems independently and collectively contributes to the quality of life. It is more about the understanding of these connections and achieving a balance among the social, economic, and environmental components on the earth.

Interconnectedness of the three systems



Sustainable development involves the simultaneous pursuit of economic prosperity, environmental quality and social equity. "Sustainable community development means the ability of the community to make developmental choices which respect the relationship between the three E's, i.e. economy, ecology, and equity.

- **Economy** - economic activity should serve the common good, be self-renewing, and build local assets and self-reliance.
- **Ecology** - humans are part of nature, nature has limits, and communities are responsible for protecting and building the natural assets.
- **Equity** - the opportunity for full participation in all activities, access, benefits and decision-making of a society.

Sustainable development shows a compassionate concern for the posterity and for the world as a whole. It contends that social development, environmental soundness, and economic growth are not contradictory or incompatible. Healthy environment and good society are, rather, prerequisites for sustainable development. Sustainable development is based on a broader economic system which fulfils inter-generational equity criteria. Its objectives are focused on the future, not the present, quality not quantity, protection not production, conservation not consumption (Das, 2018).

Sustainability is also related to the quality of life in a community - whether the economic, social, and environmental systems that make up the community are providing a healthy, productive, meaningful life for all community residents, present and future. Hence, the field of sustainable development can be conceptually broken into three constituent parts: environmental sustainability, economic sustainability, and socio-political sustainability. Sustainable development integrates the imperatives of developmental and environmentalism. It emphasis on economic, social, and ecological integration, and has three broad objectives of economic efficiency, social acceptability and ecological sustainability.

Sustainability is an issue for all communities, ranging from small rural villages that are losing their natural environment, upon which their livelihoods depend, to large metropolitan areas where crime and poverty are decreasing the quality of life. Sustainability is not about maintaining the status quo or reaching perfection, nor is it a community where nothing ever goes wrong. A sustainable development process seeks to maintain and improve the economic, environmental, and social characteristics of an area

so that its members can continue to lead healthy, productive, enjoyable lives at present and in future.

Sustainable development improves the economy without undermining the social or environmental imperatives. It focuses on improving our lives without continually increasing the amount of energy and material goods that we consume. A sustainable community does not consume resources energy and raw materials faster than the regenerative capacity of the natural systems. 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 natural capital (the sum total of nature's resources) is used up faster than it can be replenished. Thus, there is urgent need to develop an ecosystem approach, or inter generational approach for the management of natural capital and social capital. Ultimately, an ecosystem approach tends to evolve and change from a consumptive economy to an economy oriented towards conservation, maintenance of capital stock, and recycling of materials.

3.4 SUSTAINABLE DEVELOPMENT INDICATORS

Indicators of sustainable development are more visible in social goals such as human development and quality of life, or socioeconomic welfare. These indicators provide early warnings about non sustainable trends of economic activity and environmental deterioration. The concept of indicators of sustainable development became popular during the Rio Earth Summit's call for indicators of sustainable development (United Nations 1994, Agenda 21). The most popular and well discussed indicators of sustainable development are: (i) Gross Sustainable Development Product (ii) Environmental Kuznets Curve (iii) Social Indicators for Sustainable Development

i. Gross Sustainable Development Product

The concept of green Gross Domestic Product (GDP) has been modified as Gross Sustainable Development Product (GSDP), which is defined as the total value of production after giving due care to social capital and natural capital of a region over a specified period of time. It is designed to replace the Gross Development Product (GDP) as the primary indicator of the economic performance of a nation. Following factors are taken into account to arrive at GDSP: -

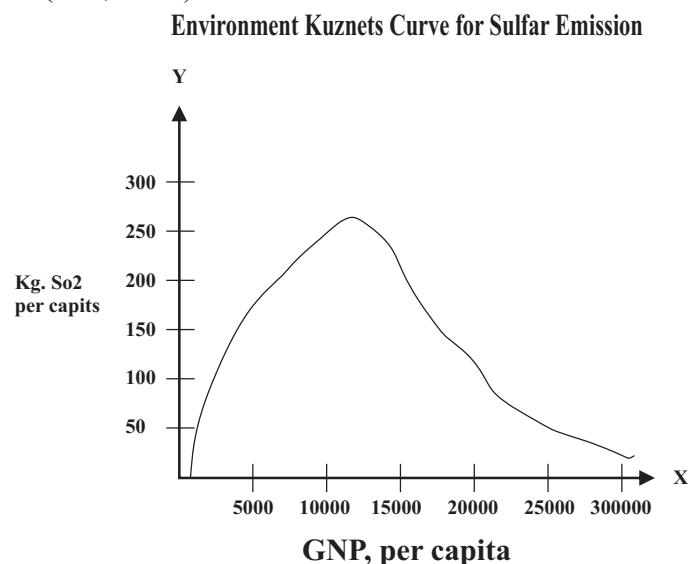
- the economic impact/costs of environmental degradation
- impacts of changes in quality systems on national income and wealth
- global concerns and their impacts on the economy and ecology and society
- the welfare, economic development, and quality of life of future generations
- expenditures on pollution abatement and clean-ups
- the status of each resource and the stocks and productive capacities
- the depreciation or appreciation of natural assets
- the ecological processes and biological diversity

- the costs of economic growth, resources uses of present and future generations .

The measurement of GSDP also gives a proper and sound signal to the public, government and industry about the rate and direction of economic growth. It identifies environmental, health, and social quality; it identifies sustainable and unsustainable levels of resource and environmental uses; it measures the success or failure of sustainable development policies and practices; and it also identifies the resource scarcity. The primary goal of a sustainable local community is to meets its basic resource needs in ways that can be continued in the future (Das, 2018).

ii. Environmental Kuznets curve

The relationship between richness, poverty and environmental pollution is considered as one of the indicator of sustainability. It has been observed that level of pollution is less initially in poor countries, and it becomes more during its economic growth and development stage, and later the pollution level declines as the income level improves in the country. The world's poorest and richest countries have relatively clean environments, while middle-income countries are the most polluted. Because of its resemblance to the pattern of inequality and income described by Simon Kuznets (1955), this pattern of pollution and income has been labelled an 'Environmental Kuznets Curve' (EKC). The World Bank first popularized this idea in 1992, using a simple empirical approach. In simple terminology, the EKC shows the relationship between the environmental degradation and the per capita income. The proponents of EKC are of the opinion that in the early stages of economic growth, degradation and pollution increase, but beyond some level of per capita income, the trend reverses, so that at high-income levels, economic growth leads to environmental improvement. This implies the environmental impact indicator is an inverted U shaped function of per capita income. The EKC pattern does not provide evidence of market failures or efficient policies in rich or poor countries. Rather, there are multiple underlying mechanisms, some of which have begun to be modelled theoretically. An example of EKC of sulphur emission is given in figure below (Das, 2018).



Source: <http://www.ecoeco.org/pdf/stem.pdf>

iii. Social Indicators of Sustainable development

The social indicators of sustainable development as framed by the United Nations Commission on Sustainable Development (CSD) in 1995 are broadly categorized under five indicators, such as poverty; governance; health; education; and demography.

- i. Poverty:** Poverty is considered as one of the key indicators of sustainable development. Nations with a high percentage of people earning less than one dollar a day are considered to be living below the poverty line. The income inequality is represented by ratio of their share in national income. The proportion of population using poor drinking water quality, poor sanitation facility, households without electricity connection and proportion of population living in slums.
- ii. Governance:** Governance is the second key indicator of sustainable development. Good governance is an essential element of sustainable development, while the rate of crime and corruption in governance of development activities is considered indicator of unsustainable development.
- iii. Health:** The key indicators of sustainable health care are mortality rate under five years of age, and life expectancy at birth, health care delivery, nutritional status and health status and risks.
- iv. Education:** As far as education is concerned, sustainable education includes educational levels and literacy. The core indicators are the gross intake ratio to last grade of primary education, net enrolment rate in primary education, adult secondary (tertiary) schooling attainment level, and the adult literacy rate.
- v. Demography:** The two vital demographic indicators of sustainable development are population growth and the dependency ratio. The indicators of demographic themes for sustainable development are the lower fertility rates and lower dependency ratios.

You have read about fundamentals of sustainable development, sustainable development- indicators. Now, answer the questions in Check Your Progress 2.

Check Your Progress 2

Note: a) Write your answer in about 50 words.

b) Check your answer with possible answers given at the end of the unit

1. What do you mean by Gross Sustainable Development Product?

2. What is the Environmental Kuznets Curve?

3.5 STEPS FOR SUSTAINABLE DEVELOPMENT

Sustainable development is an important development agenda of the 21st century and is more known for the vital paradigm shifts in the theoretical understanding and practical application of development. Now all countries have to take appropriate measures for the promotion of sustainable development in all development programmes, projects and policies. Therefore, for the guidance and supervision the United Nations has emphasized its institutional framework for sustainable development. In its institutional framework for sustainable development, it has mentioned that for the attainment of sustainable development, good governance, sound economic policies, social democratic institutions responsible to the needs of the people, and improved infrastructure are the basis for sustained economic growth, poverty eradication, and employment generation (Das, 2018).

Based on the available literature, practices and policies dealing with measures of sustainable development some measures for the promotion of sustainable development have been suggested as under:

1. The conservation of land, water and energy resources is fundamental for the promotion of sustainable development. Appropriate action has to be taken for the conservation of scanty resources. Conservation of resources by the present generation will provide future generation with widest range of possibilities.
2. The development of technologies and approaches which will minimize the environmental damages. Such development requires scientific knowledge and continuous investment needs to be promoted.
3. In order to meet the suggested environmental targets, political and public support is encouraged to meet the desired critical objectives.
4. Public participation in decision making in all environmental issues is very important, and hence efforts and scope should be made to increase their role in particular in the planning processes.
5. A number of developed and developing countries have already initiated good practices which are in tune with the promotion of sustainable development:
 - (a) in Brazil, the bio-fuels programme has saved the country \$100 billion in external debt-a fact that makes such fuels attractive in many countries
 - (b) in South Africa, the implementation of carbon capture and storage technology brings benefits in terms of technology transfer.

The United Nations has strengthened and integrated the three dimensions of sustainable development policies and programmes, and to promote the full integration of sustainable development objective with social development issues.

3.6 LET US SUM UP

This unit has discussed the concept and definition of sustainable development with real life examples from the society and environment. It also dealt

with various components of sustainable development as understood and viewed globally. The various indicators of sustainable development were analyzed in the light of rural and urban, industrial and agrarian and finally, the developed and developing countries. Finally the unit enumerated the various measures to promote sustainable development.

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3.8 CHECK YOUR PROGRESS - POSSIBLE ANSWER

Check your Progress 1

1 What is the need for sustainable development?

Answer: The need for sustainable development arises for two important reasons. Those are: (i) the current system of development considers development of mankind alone and ignores the interdependent ecosystem; and (ii) it treats environment as a commodity.

2 What do you mean by sustainable development?

Answer: According to the Brundtland Commission "Sustainable development" is that which "meets the needs of the present without compromising the ability of future generations to meet their own needs." It has three components: a) Economy - economic activity should serve the common good, be self-renewing, and build local assets and self-reliance. b) Ecology - humans are part of nature, nature has limits, and communities are responsible for protecting and building natural assets. c) Equity - the opportunity for full participation in all activities, access, benefits, and decision-making of a society. It has three objectives: i. Economic efficiency, ii. Social acceptability, and iii. Ecological sustainability

Check Your Progress - 2

1. What do you mean by Gross Sustainable Development Product?

Answer: The Gross Sustainable Development Product is the total value of production after giving due care to the social capital and natural capital of a region over a specified period of time.

2. What is the Environmental Kuznets Curve?

Answer: In simple terminology, the EKV shows the relationship between the environmental degradation and the per capita income. The proponents of EKV are of the opinion that in the early stages of economic growth, degradation and pollution increases, but beyond some level of per capita income, the trend reverses, so that at high income levels, economic growth leads to environmental improvement. This implies the environmental impact indicator is an inverted U shaped function of per capita income.



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