

Q Give a description of the indicators of sustainable development.

Ans: The indicators of sustainability could be partly monetary and partly physical, for critical natural assets. The indicators of sustainable development are discuss as belows;

(i) Pressure Indicators: Pressure indicator refers to flow variables. They show the development over time of amounts of emissions, discharges, discharges, extractions and interventions originating from a set of economic activities. These indicators express the burden placed on stocks of environmental goods and resources. It is to be noted that environmental pressure in a particular region does not necessarily have to affect the same region. Emission may be imported or exported, by the direction of the wind.

(ii) Impact Indicators: This indicator reflects the impact of this environmental pressure on the receptors in a predetermined region. This indicator includes imported transboundary pressures. It shows the development over time of the stocks and qualities of environmental goods and services. Equitable distribution of

resources between the present and future generations will be at stake.

(iii) State Indicator: Environmental conditions relate to the quality of the environment and the related affects and the quality and quantity of natural resources. They cover ecosystems and natural environment conditions as well as quality of life and human health aspects. As such they reflect the ultimate objective of environmental policies. Indicators of environmental conditions are designed to give an overview of the situation concerning the environment and its development over time.

(iv) Response Indicator: Societal responses show the extent to which society responds to environmental concerns through environmental, general economic and sectoral policies and through changes in awareness and behaviour. They refer to individual and collective actions that are intended to:

(a) Mitigate, adapt or prevent human-induced negative effects on the environment.

(b) Halt or reverse environmental damage

already inflicted.

(c) Pressure and conserve nature and natural resources.

Examples of indicators of responses are environmental expenditure, environment-related taxes and subsidies, price structures, costs recycling costs etc.

In recent times, the list of indicators of Sustainable development has expanded enormously. Many important qualitative as well as quantitative changes occurred in the approach to Sustainable development. The study of the economy - environment - society relationship changed from being multi-disciplinary to being inter or even trans-disciplinary.

Q. What is integrated environmental and economic accounting? How does it differ from the environmental system of national accounts? (10)

Ans: Environmental accounting is defined as the identification, compilation, estimation and analysis of environmental cost information for better decision-making within the firm.

The statistical Division of the United Nations has been working to supplement the system of National Accounts with a satellite system of integrated environmental and economic accounting.

The satellite accounts involve supplementing both standard balance sheets and income sheet of natural resources measured in physical quantities. For some it is also possible to impute a monetary value that can be added to physical capital to form an extended capital account.

Parikh have further elaborated on the system of environmental and economic accounting as developed by the United Nations. Their measure of Green Net National Product is as follows:

GNP = Value of consumption of normal goods and services.

and services.

- (a) Value of production of 'materials collected'.
- (b) Value of environmental amenities provided by environmental resource stocks.
- (c) Value of leisure enjoyed.
- (d) Value of net additions to production capital.
- (e) Value of additions to stock of defensive capital.

When drawing up national income accounts,

the environmental losses can be subtracted to produce a new measure of growth. Once the pricing of national accounts is ensured, the abovesaid deductions are made, environmentally unsound production and consumption patterns can be identified. Offering early warnings of economic growth that may be leading to unsustainable human development.

According to Martin Weale, environmental accounts can be set out in either money value or in physical terms. A system set out in money values has the advantage that it can be inserted directly into the standard system of national accounts. However, there is the difficulty that some environmental phenomena may be of great economic

importance even though it is impossible to attach any value to the asset concerned. While a physical system of accounts cannot be expected to fit neatly into the conventional accounting system, there is no obstacle to the combination of physical data and monetary values in the same table, provided one does not expect total totals and column totals to balance.

There is a problem with this kind of analysis from the need to integrate the environmental with those of the rest of the economy. The remainder of the accounting matrix is shown in market-determined prices, and those environmental services, such as landscaping or land improvement will be valued like any other services. But their environmental value may well exceed this:

Q Bring out the difference between classical economic ideas of development and sustainable development. (5)

Ans: The classical economic ideas of development has been dominated by the following major strands of thought.

First, the focused on theories and patterns of structural change, used modern economic theory and statistical analysis in an attempt to internal process of structural change to succeed in generating and sustaining a process of rapid economic growth.

Second, the international dependence revolution was more radical and political in orientation.

Third, the counterevolution in economic thought emphasised the beneficial role of free markets, open economies and the privatization of inefficient public enterprises.

The classical economists were more concerned with the problems of an economy as a whole. Their discussing attention as to "how does the growth of an economy occur?".

On the other hand Sustainable development is one of the many processes of development, which is in focus for past two decades. It encompasses different measures and concepts

of development - economic development, socialistic pattern of growth, inclusive growth, green development etc. - although in a modified form.

Sustainable development equally weighs the development prospects of both the present and the future generations on a more permanent basis.

Paradoxically, the concept 'Sustainable development' has evolved two different approaches, the outcome approach which emphasizes flow variables and the opportunity approach which emphasizes stock variables. The principle of inter-generational equity is the core of the outcome approach.

The ultimate goal of development is to bring about improvement in the quality of life in society. It has dimension - environment conservation. It one which conserves nature and maintains ecological order - biodiversity, thereby making life on the earth possible in future as at present.



Q. Briefly state the concept of optimal rate of harvest? (5)

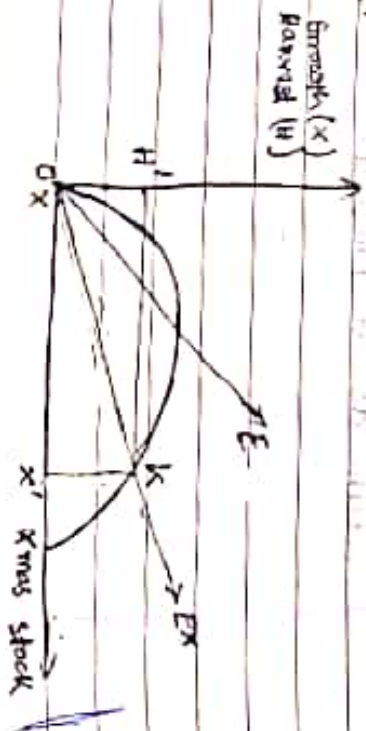
Ans To find the optimum harvest rate we introduce the concept of rate of harvesting and the costs and revenue related to harvesting of the resource. We start with a reasonable hypothesis that the effort (E) made to harvest a resource is equal to the ratio of the actual harvest (H) to the stock (x). So we can write,

$$E = \frac{H}{x}$$

The above equation tells us that bigger the effort, greater will be the proportion of the stock that would be harvested. We can rewrite equation (1) as

$$H = Ex.$$

Now, the rate of harvest is shown in the figure below, which shows how the effort level will determine the stock level and the harvest.



In the diagram, at point x, EX is equal to the rate of growth of the resource and if gives the harvest level and the stock at x'. Any harvest level along the line EX to the right of x' will mean that the harvest is greater than the sustainable yield and the stock will fall.

A harvest level along the line EX to the left of x' is less than the yield through natural regeneration and the stock will grow. We could tune our efforts so as to reach the maximum sustainable yield level as shown by EX in the diagram.