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M.E.D.-2

Sustainable Development: Issues and Challenges

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By: Dheeraj



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QUESTION PAPER

June – 2023

(Solved)

SUSTAINABLE DEVELOPMENT : ISSUES AND CHALLENGES

M.E.D.-2

Time: 2 Hours]

[Maximum Marks: 50

Note: Attempt any five questions. All questions carry equal marks.

SECTION-I

Q. 1. (a) Define sustainable development. What is sustainability? State the three specifications prescribed by Harman Daly for maintaining sustainability.

Ans. Ref.: See Chapter-1, Page No. 6, Q. No. 1, Page No. 1, 'Sustainability'.

Also Add: Harman provided three specification regarding Sustainability. These are:

1. Social Sustainability
2. Economic Sustainability
3. Environmental Sustainability

Also Ref.: Chapter-1, Page No. 8, Q. No. 1.

(b) Mention five factors in approaching self-regulation while framing developmental policy.

Ans. Ref.: See Chapter-1, Page No. 2, 'Critique of Growth Model', Page No. 3, 'Industrialization', 'Urbanisation', 'Inequalities' and 'Resource Utilization'.

Q. 2. (a) State the four basic characteristics of nature in ecosystem approach. List any three actions suggested by Peter Umara Ojunga for its application.

Ans. Ref.: See Chapter-3, Page No. 22, 'Eco-System Approach'.

Also Add: Peter Omara Ojunga has mentioned following actions for applying the ecosystem approach:

1. An ecosystem inventory to determine community zones.
2. Identification of natural processes which lead to stability.
3. An analysis of inventory data to evaluate the functional significance of the ecosystem components.

(b) Define sustainable livelihood. Give any three capital assets with examples by which individuals draw their livelihood.

Ans. Ref.: See Chapter-3, Page No. 23, 'The Livelihoods Approach'.

Q. 3. (a) Briefly explain any five points to be considered by farmers and livestock producers for sustainable animal production practices.

Ans. Ref.: See Chapter-5, Page No. 40, 'Plant Production Practice' and Page No. 41, 'Animal Production Practices'.

(b) State any five consequences of industrialisation leading to environmental degradation.

Ans. Ref.: See Chapter-6, Page No. 57, Q. No. 2.

Q. 4. (a) Describe five significant factors that led to divergence in the growth patterns between developed and developing countries.

Ans. Ref.: See Chapter-7, Page No. 65, 'Indicators of Inequality'.

(b) Discuss intellectual property rights. List any three areas where IPR requirements are important. What is the role of TRIPs in the context of IPR?

Ans. Ref.: See Chapter-8, Page No. 80, 'Intellectual Property Rights' and Page No. 83, Q. No. 3.

Q. 5. (a) What are the full forms of CPCB and SPCB? Describe their roles and responsibilities.

Ans. CPCB stands for Central Pollution Control Board and SPCB stands for State Pollution Control Board.

Also Ref.: See Chapter-9, Page No. 94, Q. No. 3.

(b) What is ESCAP? State any of its four main goals.

Ans. Ref.: See Chapter-10, Page No. 101, 'United Nation Economic and Social Commission Asia and Pacific (ESCAP)'.

Q. 6. (a) Describe any five major challenges in taking global initiatives for environmental protection.

Ans. Ref.: See Chapter-11, Page No. 111, Q. No. 1.

(b) Discuss the role of NGOs in protecting the environment.

Ans. Ref.: See Chapter-12, Page No. 122, Q. No. 3.

Q. 7. (a) Define traditional knowledge. List any four principles in building partnership between scientific communities and traditional knowledge holders.

Ans. Ref.: See Chapter-13, Page No. 124, 'Traditional Knowledge' and 'Modern Scientific Knowledge'.

(b) What are five M's in the context of production technology? List any five benefits of alternative manufacturing paradigm.

Ans. A production technology is a method of combining the following five Ms:

M1 : Machine/know how

M2 : Materials, including energy

M3 : Money

M4 : Management and Manpower

M5 : Market and Users

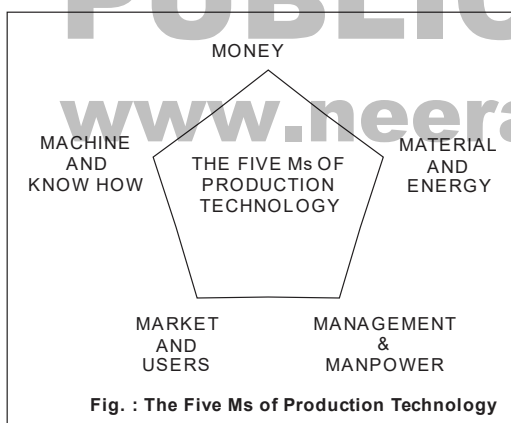


Fig. : The Five Ms of Production Technology

An alternate manufacturing technological paradigm combines the production processes with the process of sustainable development. These technologies provide for flexible production and allow for:

1. Decentralized production.
2. Descaling.
3. Better use of local resources and skills.
4. Reduced affluent discharges.
5. Improved energy efficiencies.
6. Lower capital and labour ratios.

A small-scale industrialisation system, especially relevant to developing countries, based on biotechnology, microelectronics, new materials and information technology is emerging. Use of these manufacturing technologies can help redress the rural-urban imbalance besides providing rural employment opportunities. In order for the industry to be environmentally sustainable, it has to adopt green technologies.

Q. 8. (a) What is ethnobotany? Explain and state ethno-silviculture refugia purposes served by it.

Ans. Ref.: See Chapter-15, Page No. 145, 'Ethnobotany' and '(iii) Ethno-Silviculture Refugia'.

(b) What is cooperative marketing? List any four of its main functions.

Ans. Ref.: See Chapter-16, Page No. 159, 'Cooperative Marketing'.

Also Add: Its main functions are:

1. To market the produce and assure regular trade outlets for the produce.
2. To facilitate storage, pooling and transport of produce.
3. To supply the farm requirements like fertilisers and agricultural implement.
4. To provide credit facilities to members.
5. To act as agents of the government for procurement of food grains and implementation of price support policy.

■ ■

Sample Preview of The Chapter

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SUSTAINABLE DEVELOPMENT: ISSUES AND CHALLENGES

What is Sustainable Development?



INTRODUCTION

Many of the ideas that are now embedded in the concept of sustainable development have been around for a long time—from as long ago as the work of Malthus on population growth in the late 1700s. But the concept really only emerged during debate in the early 1970s following a range of key publications drawing attention to man's over-exploitation of the environment, focusing on economic development and the growing global concern about development objectives and environmental constraints and examining the inextricable links between environment and development.

While many of the environmental management principles embodied in the concept of sustainable development are derived from this ecological perspective, the social aspects are now also accepted to be of equal concern alongside economic issues. In 1987 by the World Commission on Environment and Development (WCED), otherwise known as the Brundtland Commission (after its Chairperson, Gro Harlem Brundtland, Prime Minister of Norway) gave this definition: "Economic and social development that meets the needs of the current generation without undermining the ability of future generations to meet their own needs".

The goal of sustainable development, while implicit in many national policies, gained global recognition and commitment following the UN Conference on

Environment and Development (UNCED), otherwise known as the Earth Summit, held 1992 in Rio de Janeiro.

Sustainable development is defined as a pattern of social and structured economic transformations (i.e. development) which optimizes the economic and societal benefits available in the present, without jeopardizing the likely potential for similar benefits in the future. A primary goal of sustainable development is to achieve a reasonable and equitably distributed level of economic well-being that can be perpetuated continually for many human generations.

CHAPTER AT A GLANCE

MEANING OF SUSTAINABILITY, DEVELOPMENT AND SUSTAINABLE DEVELOPMENT

A sustainable process or condition is one that can be maintained indefinitely without progressive diminution of valued qualities inside or outside the system in which the process operates or the condition prevails. Such a definition may be logically appealing, but it is hardly sufficient for addressing the meaning of sustainability in the context of practical choices about how to maintain or improve the well-being of humans on this planet.

Sustainability: Much of the current salience of concepts of sustainability has come from a wide-ranging international discussion about sustainable development, which has been defined variously as, for example:

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- Meeting the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987).
- Improving the quality of human life while living within the carrying capacity of supporting ecosystems (IUCN 1991).

Economic growth that provides fairness and opportunity for all the world's people, not just the privileged few, without further destroying the world's finite natural resources and carrying capacity.

Development: Development by this definition should by no means be considered synonymous with economic growth, since growth by itself does not assure progress toward alleviating any of the indicated ills. (Economic growth may be a necessary condition for alleviating some of them, but it is certainly not a sufficient condition.) Note also that we have placed sustainable in front of development to mean not that the development is of a form that can be continued indefinitely but rather that the choice of processes and end states for development are compatible with maintaining the improved conditions indefinitely. Under this sort of interpretation, even the much-maligned term sustainable growth need not be an oxymoron; it can be taken simply to mean growth in forms-and to end points-compatible with sustainability of the improved conditions it helps bring about.

Sustainable Development: Sustainable development is a universal term but has a very different meaning to people throughout the world. The films in this package explore a host of different views on global environment and sustainable development. They provide food for thought to address social and environmental ills that must be faced if development in the 21st century must continue apace. They shed light on sustainable development, to give a glimpse of its meaning to people in different parts of the world, not to provide the answers, but to give a more informed insight into the policy issues. Sustainable development, as defined by the **Brundtland Commission (1987)** is "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

By definition, then, sustainable development is development that takes the impact on the environment into account and tries to minimize environmental damage. This means that a wide range of factors need to be considered when new development is proposed.

Objectives of Sustainable Development: The following aims are relevant, (though the list is not exhaustive):

(i) Protect and enhance the environment

- conserve natural resources e.g. energy, water, land, minerals, woodlands and soil and promote their efficient use.
- reduce waste and promote recycling and re-use of materials.
- reduce pollution and emissions.
- conserve, protect and enhance the countryside, natural features, designated areas, historic environment and wildlife.
- encourage sustainable transport and integrate land use and transport infrastructure.
- concentrate new development in urban areas and encourage regeneration.
- minimise noise and light pollution.

(ii) Meet social needs

- create and protect open spaces and create high quality, well-designed buildings.
- protect local character and distinctiveness.
- strengthen community and cultural identity.
- improve leisure, recreation and community and cultural facilities.
- provide homes for all sections of the community.

(iii) Protect human health and amenity

- create safe and secure communities.
- meet needs locally insofar as possible.
- involve the community in decision-making.

(iv) Promote economic success

- promote a vibrant and diverse local economy (within the environmental constraints).

Critique of Growth Model

Suppose for the present that a particular country is quite developed. We would certainly like this level of development to go up further or at least be maintained for future generations. This is obviously desirable. However, since the second half of the twentieth century, a number of scientists have been warning that the present type, and levels, of development are not sustainable. Consequences of environmental degradation do not respect national or state boundaries; this issue is no longer region or nation specific.

Our future is linked together. Sustainability of development is comparatively a new area of knowledge in which scientists, economists, philosophers and other social scientists are working together.

In general, the question of development or progress is perennial. At all times as a member of society and as individuals we need to ask where we want to go, what we wish to become and what our goals are. So the debate on development continues.

With increasing purchasing power, wasteful consumption linked to market driven consumerism is stressing the resource base of developing countries further. It is important to counter this through education and public awareness. In several areas, desirable limits and standards for consumption need to be established and applied through appropriate mechanisms including education, incentives and legislation.

Several traditional practices that are sustainable and environment-friendly continue to be a regular part of the lives of people in developing countries. These need to be encouraged rather than replaced by more 'modern' but unsustainable practices and technologies.

Industrialisation

The Industrial Revolution was a period from the 18th to the 19th century where major changes in agriculture, manufacturing, mining, transport, and technology had a profound effect on the socio-economic and cultural conditions starting in the United Kingdom, then subsequently spreading throughout Europe, North America, and eventually the world. The Industrial Revolution marks a major turning point in human history; almost every aspect of daily life was eventually influenced in some way.

The concept of sustainable development has become popularised in the past decade as a goal for industrialised and developing countries. Sustainable Industrialization by David Wallace addresses the issue of sustainable development from an industrial perspective. Industrialised countries are far past the equilibrium point between sustainability and development. Developing countries are growing rapidly and are in danger of following the Western countries into economies based on unsustainable industries.

Urbanisation

The process of urbanisation seems to be associated with economic growth and the sectoral composition of the economy. Cities are becoming part of metropolitan areas with regional and even global webs of economic centres connected with each other by transport systems. Poverty remains the main urban problem in developing regions. Local sustainability requires a more efficient use of water resources, materials, energy and land as well as the development of an attractive environment for economic activities. This requires an adequate system of comprehensive urban and infrastructure planning, taking into account accessibility as well as the protection of the cultural and ecological heritage. Both the management of future uncertainties, as well as diversity of perspectives on sustainable development

could be acknowledged by finding ways to increase public participation in designing desirable sustainable futures.

Inequities

History has led to vast inequalities, leaving almost three-fourths of the world's people living in less-developed countries and one-fifth below the poverty line. The long-term impact of past industrialisation, exploitation and environmental damage cannot be washed away. It is only right that development in this new century be even more conscious of its long-term impact. The problems are complex and the choices difficult. Our common future can only be achieved with a better understanding of our common concerns and shared responsibilities.

Resource Utilisation

As a scientific resource utilisation concept, Sustainable Development Initiative (SDI) is seldom *ab initio* in native societies. In most instances they are externally driven determinate missions. To be successful, SDI should be voluntary and continuous. It is widely observed that native societies lack the wisdom necessary to initiate and sustain sustainable development initiatives. Hence, the primary hurdle before the development worker (hence forth referred as Transformative Agent, TA) is to initiate SDIs from within the society. The TA should motivate the society to a threshold that it spontaneously initiates the Sustainable Development Movement (SDM). The sustainable development movement is more than half completed, if the TA can infuse a sense of collective ownership for natural resources in the native society.

ORIGINS OF SUSTAINABLE DEVELOPMENT

Rachel Carson's *Silent Spring* was published in 1962. Many consider the book's release a turning point in our understanding of the interconnections among the environment, the economy and social wellbeing. Since then, many milestones have marked the journey towards sustainable development. *Silent Spring*, by Rachel Carson, brings together research on toxicology, ecology and epidemiology to suggest that agricultural pesticides are building to catastrophic levels, linked to damage to animal species and human health.

The notion of progress as something that is possible endlessly into the future was first challenged in 1972 in a report called *The Limits to Growth*, published by the Club of Rome, an international association of scientists, business executives, public officials and scholars. The report challenged the idea of progress that compares the present with the past, and considers the future an

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endless possibility for further growth and improvement, on the grounds that it failed to acknowledge the obvious truth that resources are finite, and hence growth dependent on resources can not be endless. The implicit message of The Limits to Growth was that growth needed to be replaced with no growth.

While Limits to Growth emphasized what should not be done (i.e. growth), it did not define what the goal of public policy should be. Two key reports: The World Conservation Strategy I, published in 1980 by the International Union for the Conservation of Nature and Natural Resources (IUCN), and Our Common Future (also known as the Brundtland Report after the chairman of the committee), published by the UN appointed World Commission on Environment and Development seven years later, provided the answer as “sustainable development”– and thus the concept of sustainable development was born.

In parallel with the penetration of the concept of sustainable development to the political level, the concept has also been subject to immense scholarly interest. Environmental economists have, for instance, extensively attempted to define sustainability in terms which, at least in theory if not always in practice, would enable policy planners and analysts to actually determine if a given policy or initiative is supportive of sustainable development or not.

DEFINITIONS OF SUSTAINABLE DEVELOPMENT (DIMENSIONS AND CONCEPTS)

The Brundtland Report: In 1987 the Brundtland Report, also known as Our Common Future, alerted the world to the urgency of making progress towards economic development that could be sustained without depleting natural resources or harming the environment. Published by an international group of politicians, civil servants and experts on the environment and development, the report provided a key statement on sustainable development, defining it as:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The Brundtland Report was primarily concerned with securing a global equity, redistributing resources towards poorer nations whilst encouraging their economic growth. The report also suggested that equity, growth and environmental maintenance are simultaneously possible and that each country is capable of achieving its full economic potential whilst at the same time enhancing its resource base. The report also

recognised that achieving this equity and sustainable growth would require technological and social change.

The report highlighted three fundamental components to sustainable development: Environmental protection, economic growth and social equity. The environment should be conserved and our resource base enhanced, by gradually changing the ways in which we develop and use technologies. Developing nations must be allowed to meet their basic needs of employment, food, energy, water and sanitation. If this is to be done in a sustainable manner, then there is a definite need for a sustainable level of population. Economic growth should be revived and developing nations should be allowed a growth of equal quality to the developed nations.

The Earth Summit: The Earth Summit in Rio de Janeiro was unprecedented for a UN Conference, in terms of both its size and the scope of its concerns. Twenty years after the first global environment conference, the UN sought to help governments rethink economic development and find ways to halt the destruction of irreplaceable natural resources and pollution of the planet. Hundreds of thousands of people from all walks of life were drawn into the Rio process. They persuaded their leaders to go to Rio and join other nations in making the difficult decisions needed to ensure a healthy planet for generations to come.

Patterns of Production: Particularly the production of toxic components, such as lead in gasoline, or poisonous waste—are being scrutinized in a systematic manner by the UN and governments alike:

- Alternative sources of energy are being sought to replace the use of fossil fuels which are linked to global climate change;
- New reliance on public transportation systems is being emphasized in order to reduce vehicle emissions, congestion in cities and the health problems caused by polluted air and smog;
- There is much greater awareness of and concern over the growing scarcity of water.

The two-week Earth Summit was the climax of a process, begun in December 1989, of planning, education and negotiations among all Member States of the United Nations, leading to the adoption of Agenda 21, a wide-ranging blueprint for action to achieve sustainable development worldwide. At its close, Maurice Strong, the Conference Secretary-General, called the Summit a “historic moment for humanity”. Although Agenda 21 had been weakened by compromise and negotiation, he said, it was still the