Chapter – 1 (Mishra and Puri).

ECONOMIC GROWTH, ECONOMIC DEVELOPMENT AND UNDERDEVELOPMENT.

Concept of Economic Growth. This concept involves greater industrialisation and commercialisation of economic activities.

Increase in GDP (in a closed economy) and GNP (in an open economy) over a long period of time. But these increases are not considered a good measure of economic growth as increase in population causes decline in per capita income (PCI).

Rise in PCI is considered as the best measure of economic growth. But according to Jacob Viner, decline in disparities regarding distribution of income along with rise in PCI is the most appropriate measure.

Concept of Economic Development.

Till 1960s, economic growth and economic growth were considered to be the synonymous terms. At present, economic growth is defined as economic growth along with progressive changes leading to welfare of the people.

Mahboob-Ul-Haq defines it as an attack on worst form of poverty. Reduction in illiteracy, malnutrition, diseases, inequalities and unemployment etc.

Underdevelopment: meaning and indicators. There is no accepted definition of underdevelopment. Its indicators are:
Characteristics of underdeveloped or developing nations.

1. Low GNP/ GDP.
2. Low PCI.
3. Rapid growth of population (2% or more every year).
4. Low level of productivity.
5. Technological backwardness due to lack of research and development. Many underdeveloped nations aren't switching to application of machines as it may lead to mass unemployment.
6. High rates of unemployment or underemployment, especially among the unskilled workers. About 30% labour force remains unutilised.
7. Lower level of human well being: low income, poor health and education attainments. High infant mortality rate, low adult literacy rate.
8. Wide income inequalities.
10. Agrarian economy: 30-70% workforce employed in agriculture sector. Also agriculture is more backward due to low application of high yielding varieties (HYV) seeds and chemical fertilizers.
11. Low participation in foreign trade due to inadequate development of infrastructure for foreign trade such as transportation and banks with overseas branches.
12. Dependence on developed nations: though the colonies of Asia and Africa have attained political freedom, they still depend on former rulers as they were forced to specialise in primary activities.
13. Human capital is less developed.
14. Underdeveloped countries are soft states and legal system is defective at implementation level.
**Chapter – 2**

**ECONOMIC AND HUMAN DEVELOPMENT.**

**Role of natural resources in Economic Development.** Until 1930s, development and underdevelopment of a nation was considered to be based on the availability and quality physical environment and natural resources. It was supported by the economists like Jacob Viner. Presence of a favourable natural environment is credited to the development of an economy. But Switzerland is an exception to it.

**Role of economic factors in Economic Development.** Role of economic factors is decisive in development of an economy. The major economic factors are:

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<td>• Harrod- Domar model considers capital as an important ingredient in economic growth.</td>
<td>• Increase in urban population with economic development.</td>
<td>• Classical economist emphasised upon specialisation of underdeveloped nations in primary products and developed nations in manufacturing sector.</td>
<td>• Economic system and historical setting of a nation has much emphasis on development of the nation.</td>
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<td>• Lack of capital formation in underdeveloped nations. Less demand of investment due to existance of small size of market. On the other hand low PCI and demonstration effect in savings leads to low savings.</td>
<td>• Productivity of agriculture has to be increased to feed the urban population.</td>
<td>• Raul Prebisch says such trade is against Balance of Payments situation for underdeveloped nations.</td>
<td>• Third world nations can't develop using laissez faire economy.</td>
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<td>• Hence marketable surplus of agriculture is required.</td>
<td>• Internationally trade beneficial for nations who have set up industries in relatively short duration.</td>
<td>• They can adopt either the capitalist system with rational intervention of the state; or economic planning.</td>
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<td>• Otherwise import of foodgrains is only option.</td>
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**Role of Non-Economic factors in Economic Development.**

**Human Resources.** Efficient and skilled labour contributes to the development. Unutilised or unmanaged manpower acts as hurdle on the economy.

**Technical know-how and general education.** Investment in human capital has direct bearing on the pace of development. It has been emphasised by A. K. Sen and T. W. Schultz.
Political Freedom. Explained by Dadabhai Naoroji in his work “Poverty and Un-British Rule in India” that drain of wealth from India under the British regime was the major cause of poverty for India. It arrested development process of India.

Social organisation. Mass participation of people is must for development process. People show interest in the development process when they are assured that fruits of development will be fairly distributed.

Corruption. Rampant corruption in an economy makes all attempts of development futile.

Desire to develop. Richard Gill emphasised that development is not just a mechanical process. It depends upon the skill, quality and attitudes.

Human Development.

As an alternative to the GNP as a measure of economic development, the human development can be measured by Human Development Index (HDI) developed by UN Development Programme (UNDP) in its first report called Human Development Report (HDR) under the stewardship of Mahbub ul Haq published in 1990.

What is human development?

The HDR has defined human development as the process of enlarging people’s choices. Such choices include:

1. Leading a long and healthy life;
2. To be educated; and
3. To enjoy a decent standard of living.

Also it includes additional choices such as political freedom; other guaranteed human rights and various ingredients of self-respect.

According to Haq, it is different from economic development inasmuch as whether it merely focuses upon the enlargement of the only choice of income, the human development focuses upon enlargement of all human choices – whether social, economic, cultural or political.

Expansion of income merely can’t enlarge all choices because:

Income distribution may be uneven in the society. Economic growth doesn’t trickle down; and

The national priorities chosen by the rulers or by the society and political structure prevalent in the society may not allow income enlargement for enlargement of human choices.

Why human development?

According to Paul Streeten, following are important reasons behind human development:
1. The ultimate purpose of the economic development is to treat human beings as ends. Economic growth is only means to it.

2. Human development may lead to higher productivity as it focuses on skills and education development, nourishment etc. These factors give birth to a capable human capital.

3. Improvement in education level and provision of better health facilities lead to population control.

4. It secures a good physical environment.

5. It contributes to a healthy civil society and greater social stability.

Expansion of GNP serves as a means to enlarge human choices.

**Components of Human Development.**

- **Equity.** Stress on equitable access to opportunities. Equitable distribution of productive assets and income. Overhauling the credit system favouring the poor.

- **Sustainability.** Sustaining of all forms of capital—human, financial, physical and environmental. Distributional equity—intragenerational and intergenerational equity. Sustainability of human opportunities not human deprivation.

- **Productivity.** Investment in human capital to enable human beings to achieve their maximum potential.

- **Empowerment.** So that people can exercise their free will in a democratic environment.

**Measurement of the Human Development – HDI (Human Development Index).** Human development, being end of all the developmental activities, its measurement is not an easy task. For its measurement, the HDI was adopted by the UNDP in its *Human Development Report* published in 1990.

**Construction of the HDI.** Prior to the HDR 2010, the HDI was based on simple arithmetic mean of the dimension indices of long and healthy life, access to knowledge and a decent standard of living.
Chapter – 3

THE ENVIRONMENT AND DEVELOPMENT.

Concern over environmental protection emerged with the pace of development worldwide. That the non-renewable resources will soon be depleted with the present level of consumption in the wake of economic development was emphasised by D.H. Meadows, D.L. Meadows and R. Randers in their study *The Limits to Growth (1972)*. According to the *World Development Report, 1992*, the environmental problems undermine the goal of development in following ways:

Bad environment quality can deteriorate the life and health of people, which may offset the benefits accrued from rising level of income; and

Due to the degradation of environment and loss of biodiversity, the development of today can jeopardise earning of tomorrow as it may lead to loss of productivity of tomorrow.

Environmental Protection and Sustainable Development.

The term “sustainable development” was first came into prominence in 1980, in the *World Conservation Strategy* presented by the *International Union for Conservation of Nature and Natural Resources (IUCN)*. However, in 1987, it was defined clearly in the *Brundtland Report* called *Our Common Future*.

For accounting of the natural resources, the Statistical Division of the UN has been working to implement the integrated satellite system of economic and environmental accounting.

Growth and Environmental Degradation.

The main health and productivity consequences of environmental degradation are:

- **Water Pollution.** Most widespread contamination of water occurs due to industrial waste. This leads to the danger to human health due to airborne diseases.

- **Air Pollution.** The main sources of air pollution are – energy use, vehicular emission and industrial production. The environmentalists highlight two specific problems of air pollution:

  - **Suspended Particulate Matter.** The standards for particulate matter (airborne dust and smoke) have been violated to such extent that the serious respiratory disorders and cancers can endanger the human beings. **Lead.** High levels of lead from vehicular emissions have led to neurological problems, including low IQ. Also higher blood pressure and high risks of heart attacks, strokes and death have been the consequences.

  - **Solid and hazardous wastes.** Many cities generate more solid wastes than they can collect or dispose off. Thus safe disposal of collected wastes remains a problem as it has led to adverse effect on human health and productivity.
• **Soil Degradation.** A study sponsored by the UNEP in 1990 that almost 11% of earth’s vegetated surface area has undergone degradation during 1945-90 due to human activities. Soil erosion is a form of soil degradation. Salinisation and water-logging are other serious forms of soil degradation.

• **Deforestation.** They are of immense value to humanity. They also protect environment. They enrich soils and regulate the hydrologic cycle and also stabilise the global climate.

  • Men have cleared forests for agricultural purposes.
  
  • The industrial pollutions in form of sulphuric oxides and nitric emission, when combine with rainwater, lower the pH value. Acid rain destroys the photosynthetic tissues of plant and hampers their autotrophic activities.
  
  • In India, at present **22.8%** of country’s land surface is under forest cover as against target of **33%** as recommended by the National Forest Policy of 1952.

• **Loss of Biodiversity.** Biological diversity is composite of genetic information, species and ecosystems. It provides to us in forms of food, medicine, fibre and inputs for industrial use.

  • Some species have become extinct due to human activity. Tropical forests have the largest concentration of species.
  
  • Such species have wiped out in past decades. But coastal, fresh water wetlands and coral reefs have also suffered degradation.
  
  • In India, 103 species have been listed as endangered under the Wildlife (Protection) Act, 1972. Out of them, 5 have known to be extinct.

• **Atmospheric Change.** Rampant pollution, environment degradation, industrialisation and urbanisation have led to adverse atmospheric change that has posed hazards to the future generation. Such hazards are:

  • **Greenhouse effect and global warming.** The climate of the earth is determined by the incoming solar energy and outgoing energy radiated from the earth and exchanges of energy among atmosphere, land, ocean and living things.

    • The inflow and outgoing solar radiation are affected by the presence of gases, and aerosols (very small particles) into the atmosphere.

    • Also the presence of water vapour and greenhouse gases such as CO₂, CH₄, Ozone (O₃) and Nitrous Oxide (NO₂). These gases impede the escape of infrared radiation from the earth’s surface into space.

    • The warming effect due to natural levels of these gases is called the natural greenhouse effect.

    • The global average of CO₂ concentration in the atmosphere has increased
significantly after the Industrial revolution, especially during past 50 years. The heat trapping caused by CO₂ and other gases has led to the global warming, which could cause melting of ice-sheets and consequential rise in the sea level. Other consequences are increase in floods, droughts and forest fires in various regions.

- International negotiations are chalking out strategies to limit the global warming to the extent of 2 °C.

- **Ozone Depletion.** Ozone depletion is mainly from the concentration of chlorine originating from chlorofluorocarbons (CFCs). CFCs do not dissolve in rain nor react with other gases in the atmosphere. CFCs thus rise high in the atmosphere and deplete the Ozone layer. This depletion results in solar ultra-violet (UV) radiation reaching to the earth's surface. This causes skin cancer and damage to the plant productivity, forestry, aquatic life and ecosystem.

**Population and Environment Linkages.**

In 1960s and 1970s, the Club of Rome and many other groups forecasted that the Earth would rapidly run out of key natural resources.

**Population and environment.** Along with rise in the population of the rural areas, there have been both push factors (such as low level of agriculture production, mass unemployment, disguised unemployment etc.) and pull factors (such as better health facilities, better employment facilities, better education etc.) that have helped in flow of the population from rural to urban areas.

### Rural population and environment.
- Pressure of rural population leads to conversion of lands to agricultural uses. Thus, encroachment on forest lands.
- Excessive use of fertilizers and pesticides leads to soil degradation and deterioration of quality of land.
- 1/5 of all tropical forests have been cleared since 1960. According to the study of FAO, the deforestation has been highest in the developing countries.

### Urban population and environment.
- Problems of overcrowding in urban areas has led to creation of slums.
- In the urban areas, the environmental degradation affects the low-income and middle-income cities in the following manner:
  - low water supply giving birth to deadly diseases due to lack of hygiene.
  - bad sanitation due to low access to public toilets.
  - inadequate and poorly managed-drainage system.
  - water contamination due to poorly maintained laterines and sevages.
  - poor facility for solidwaste management.
  - air pollution due to low quality fuels for household and fuels used by industries.
  - chaos in land management due to large scale migration from rural areas.
Environment Policy in India.

1972 National Committee on Environmental Planning and Coordination (NCEPC). It was set up in the year 1972 in the wake of the Stockholm Conference. It was the beginning of the environmental concern by India. It has the responsibility of reviewing the environmental policies and programs.

Wildlife (Protection) Act, 1972 passed.

1973 Project Tiger for protecting population of tigers.

National Tiger Conservation Authority (NTCA).

1974 The first major environmental legislation Water (Prevention and Control of pollution) Act, 1974 was passed.

1976 Article 48-A was added through the Constitutional (Amendment) Act, 1976. Under the DPSP, this provision required the government to protect and improve the environment.

1977 Water Cess Act was enacted.

1978 Environmental Impact Assessment (EIA) process initiated for river valley projects.

National Museum of Natural History (NMNH) was opened.

1980 Department of Environment was set up.


1985 Ministry of Environment and Forests (MoEF) set up as the apex body for making decisions and legislation concerning the environmental matters. Its functions are:

1. Conservation of flora and fauna, forests and wildlife;
2. Prevention and control of pollution;
3. Afforestation and regeneration of degraded areas;
4. Protection of environment; and
5. Welfare of animals.

Central Plan Scheme to support research in environment.


Biosphere Reserves with assistance from UNESCO.

1988 G.B. Pant Institute of Himalayan Environment and Development (GBPIHED)


1990 Joint Forest Management (JFM) was initiated by MoEF.
Common Effluent Treatment Plants (CETPs) have been set up.

1991 Coastal Regulation Zone (CRZ) Notification, 1991 govern the EIA process.

1992 UN Framework Convention on Climate Change (UNFCCC), adopted in Earth Summit in Rio (Brazil).

National Afforestation and Eco-development Board (NAEB) was set up.

Central Zoo Authority (CZA) established after amendment in WLPA.

Scheme on assistance to Botanic Gardens and centres for ex-situ conservation initiated.

1996 National River Conservation Plan (NRCP) was initiated.


1999 Environment Education in School Systems to promote environment education in school curriculum.

2002 National Water Policy was announced.

2002-07 The 10th FYP, in which following environmental protection steps were taken:

1. Integrated Forest Protection Scheme (IFPS) was implemented.


4. Reduction of natural disaster. Disaster Management Act, 2005 enacted. Also the National Disaster Management Authority (NDMA) was set up as per the provision of the Act.

2006 National Environment Policy announced in the month of May.

EIA Notification, 2006 governing the EIA process.

2007 Prime Minister’s Council on Climate Change set up.

Improving Water Quality.

1. The establishment of the State Pollution Control Boards (SPCBs) were established by the Water (Prevention and Control of pollution) Act, 1974, which set up and enforced the affluent standards. The Central Pollution Control Board (CPCB) was also established to coordinate the activities of SPCBs and also to advise the Central Government. They have authority to punish the violations of the Act.

2. Water Cess Act, 1977 was enacted to compel the industries to pay cess for the consumption of water.

3. Established in 1990, Common Effluent Treatment Plants (CETPs) scheme facilitates effluent treatment plants for small scale industries.

4. Established in 1996, the National River Conservation Plan (NRCP) covers 38 rivers across 20 states. Sewage treatment capacity has been set up under NRCP.

Improving Air Quality.

- Air (Prevention and Control of Pollution) Act, 1981 is the main legislation to regulate the air quality, through State Pollution Control Boards (SPCBs) and the Central Pollution Control Board (CPCB) covering 28 states and 4 union territories.


1. After the gruesome Bhopal Gas Tragedy that occurred on 4th December, 1984, the Environment (Protection) Act, 1986 empowered the Central Government to take actions that can prevent environmental pollution and that can protect the environment.

2. It has been emphatic in following manner:
   - The authority of the Central Government was extended to legislate for the entire nation.
   - Regulation can be framed for all forms of pollution.
   - Citizens can initiate actions against any defaulting industries or boards.
   - SPCBs and CPCB have been granted administrative authority to compel compliance with the laws. There was thus no need to go to courts to enforce the compliance.

Environmental Impact Assessment (EIA). It involves evaluation of a project that is likely to endanger the environment. Also it checks ecological feasibility of the projects.

1. In 1978-79, the EIA started with the assessment of the river valley projects.

2. Now it covers 39 activities such as mining/exploration, power generation, construction, manufacturing etc.


But there have been various instances of violations of these notifications due to loopholes inherent in these regulations.

Joint Forest Management (JFM) and Afforestation. Initiated through the circular of the MoEF in 1990, it JFM strives at the participation of the people in forest conservation and management. Integrated Forest Protection Scheme (IFPS) was implemented during the 10th FYP and continued till 11th FYP.

NAEB was set up in 1992 to promote afforestation, tree planting and eco-development activities. It also focused on regeneration of degraded forest areas, national parks and other ecologically fragile areas such as Western Himalayas, Aravallis, Western Ghats etc under the National Afforestation Program.

Biodiversity and Taxonomy. The Biological Diversity Act, 2002 and Rules, 2004 provide for constitution of the State Boards (SBs) and Biodiversity Management Committees (BMCs) for conservation, documentation and sustainable utilization of biodiversity. Taxonomy is the science related to exploration, identification and description of living organisms.

Assistance to Botanic Gardens. In the year 1992, the scheme for assistance to Botanic Gardens and
centres for *ex-situ* conservation of rare endemic plants was initiated. Botanical Garden of the Indian Republic (BGIR) has been set up in Noida (U.P.) to facilitate *ex-situ* conservation of rare and threatened plant species.

It also promotes research and awareness and education on conservation of plant diversity.

**Wildlife Conservation.** The subject of forest and wildlife has been placed under the Concurrent List of the Constitution. The MoEF designs and policies and planning on wildlife conservation, which are implemented by the State Forest Departments.

1. Wildlife Crime Control Bureau has been created under the Director, Wildlife Preservation to combat wildlife related crimes. It has 5 regional and 3 sub-regional offices.

2. The MoEF provides essential technical and financial supports to the state governments for wildlife conservation under various Centrally Sponsored Schemes (CSS) and through Grants in Aid to the Central Zoo Authority (CZA) and National Tiger Conservation Authority (NTCA). Major CSS include:
   - Schemes for development of national parks and sanctuaries;
   - Project Elephant;
   - Project Tiger, launched in **1973** (after an amendment in the Wildlife (Protection) Act, 1972);
   - CSS on strengthening of wildlife division;

**Biosphere Reserves.** This program was initiated in **1986** with assistance from UNESCO (Management and Biosphere) to promote social, cultural and ecological values of ecologically rich landscapes.

**Mountain Ecosystems.** The MoEF established an autonomous institute **G.B. Pant Institute of Himalayan Environment and Development (GBPIHED)** in **1988** for sustainable development and conservation of environment in the Indian Himalayan Region (IHR).

**Conservation of Mangroves and Coral Reefs.** Coral reefs protect the coastal areas from sea erosion and mangroves protect from the damage occurring from cyclone.
   - Mangroves in India account for 5% of the world’s mangrove vegetation. Sunderbans (W. Bengal) stand roughly around half of the total area under mangroves in India.
   - Major coral reef areas are:
     1. Gulf of Mannar
     2. Gulf of Kuchchh
     3. Lakshdweep and
     4. Andaman and Nicobar islands.
   - Under the CRZ Notification, 1991 and Environment (Protection) Act, 1986, the mangroves and coral reefs have been recognized as the ecologically sensitive area and designated as CRZ-1, under which they have been accorded protection of the highest order.

**Environmental education and awareness.** The MoEF is implementing *Environmental Education,*
Awareness and Training to promote awareness of importance of environment among the human beings.

1. In **1978**, National Museum of Natural History (NMNH) was opened to create public awareness in preservation of environment and nature.

2. Environment Education in School Systems opened in **1999** to promote environment education in school curriculum.

- **Environmental Information System (ENVIS)** has been set up as a network by the MoEF to collect, store and disseminate various information on environment to various users.

- **Steering Committee on Environment and Forest for the 11th Plan** recommended a unified National Environment Monitoring Programme (NEMP) for environment, ecology and socio-economic studies.

- **Disaster Management.** In the backdrop of Odisha super cyclone, Gujarat earthquake and end of the International Decade of Natural Disaster Reduction, the **10th FYP** was devoted to the reduction of natural disaster.

  1. **Disaster Management Act, 2005** enacted.

  2. Also the **National Disaster Management Authority (NDMA)** was set up as per the provision of the Act, with the Prime Minister as its Chairman.

- **Climate Change.** As per the recorded observations, India has witnessed an increase of **0.4°C** temperature in the mean surface air during the last century (**1901 to 2000**).

  - Substantial increase in mean temperature may lower the agricultural GDP to a huge extent. Climate change may also result in rise of sea levels, thereby submerging the coastal lands.

  - India has been one of the lowest GHG emitters in the world (nearly, one-tenth of that of Europe and one-eighteenth that of the USA).

**Policies and Plans (national and international) adopted by India.**

- India is a party to the UN Framework Convention on Climate Change (UNFCCC), adopted in **Earth Summit** in Rio (Brazil), in **1992**. As per its obligation under UNFCCC, India prepares National Communication (NATCOM), which gives assessment of GHGs and gives several measures for addressing climate change.

- India also signed the **Kyoto Protocol (1997)**, which came into force in **2005**.

- India has formulated a **National Action Plan on Climate Change (NAPCC)** in order to achieve sustainable development. It covers the 8 national missions under it. As its extensions, states have also been asked to prepare state level action plans.

  - NAPCC lacks in public input and transparency.

- Prime Minister’s Council on Climate Change was set up in **2007**.

  1. monitors preparation of national missions; and
2. coordination and implementation of actions on climate change in India.

- Also India has decided to reduce emission intensity by 20-25% of its GDP of 2005 level by 2020.

**Environmental Policy in 12th FYP (2012-2017).**

There have been set up 12 targets in the fields of environment, biodiversity, forestry, animal welfare and wildlife sector.