

PLUS ONE FOCUS AREA 2021

<p>UNIT II</p> <p>Chapter 3</p>	<p><i>Economic Reforms Since 1991</i></p> <p>Liberalisation, Privatisation and Globalisation: An Appraisal</p>	<p>3.1 Introduction</p> <p>3.2 Background</p> <p>3.3 Liberalisation</p> <p>3.4 Privatisation</p> <p>3.5 Globalisation</p> <p>3.6 Indian Economy During Reforms: an Assessment</p> <p>3.7 Conclusion</p>
<p>UNIT III</p> <p>Chapter 4</p>	<p><i>Current Challenges Facing the Indian Economy</i></p> <p>Poverty</p>	<p>4.1 Introduction</p> <p>4.2 Who are the Poor?</p> <p>4.3 How are Poor People Identified?</p> <p>4.4 The Number of Poor in India</p> <p>4.5 What Causes Poverty?</p> <p>4.6 Policies and Programmes Towards Poverty Alleviation</p> <p>4.7 Poverty Alleviation Programmes - a Critical Assessment</p> <p>4.8 Conclusion</p>
<p>Chapter 8</p>	<p>Infrastructure</p>	<p>8.1 Introduction</p> <p>8.2 What is Infrastructure?</p> <p>8.3 Relevance of Infrastructure</p> <p>8.4 The State of Infrastructure in India</p> <p>8.5 Energy</p> <p>8.6 Health</p> <p>8.7 Conclusion</p>
<p>Chapter 9</p>	<p>Environment and Sustainable Development</p>	<p>9.1 Introduction</p> <p>9.2 Environment - Definition and Functions</p> <p>9.3 State of India's Environment</p> <p>9.4 Sustainable Development</p> <p>9.5 Strategies for Sustainable Development</p> <p>9.6 Conclusion</p>

Chapter 1	Introduction	<ol style="list-style-type: none"> 1. Why Economics? 2. Statistics in Economics 3. What is Statistics? 4. What Statistics Does? 5. Conclusion
Chapter 2	Collection of Data	<ol style="list-style-type: none"> 1. Introduction 2. What are the Sources of Data? 3. How Do We Collect the Data? 4. Census and Sample Surveys Sampling and Non-Sampling Errors 5. Census of India and NSSO 6. Conclusion
Chapter 3	Organisation of Data	<ol style="list-style-type: none"> 1. Introduction 2. Raw Data 3. Classification of Data 4. Variables: Continuous and Discrete 5. What is a Frequency Distribution? 6. Bivariate Frequency Distribution Conclusion
Chapter 4	Presentation of Data	<ol style="list-style-type: none"> 1. Introduction 2. Textual Presentation of Data 3. Tabular Presentation of Data 4. Tabulation of Data and Parts of a Table 5. Diagrammatic Presentation of Data 6. Conclusion
Chapter 9	Use of Statistical Tools	<ol style="list-style-type: none"> 1. Introduction 2. Steps Towards Making a Project

CHAPTER-3 LIBERALISATION, PRIVATISATION AND GLOBALISATION: AN APPRAISAL

INTRODUCTION AND BACK GROUND

- The origin of the financial crisis can be traced from the inefficient management of the Indian economy in the 1980s.
- Expenditure is more than income; the government borrows to finance the deficit from banks and also from people within the country and from international financial institutions.
- The government was spending a large share of its income on areas which do not provide immediate returns such as the social sector and defence.
- The income from public sector undertakings was also not very high to meet the growing expenditure.
- Foreign exchange, borrowed from other countries and international financial institutions, was spent on meeting consumption needs.
- In the late 1980s, government expenditure began to exceed its revenue by large margins.
- No country or international funder was willing to lend to India.
- India approached the International Bank for Reconstruction and Development (IBRD), popularly known as World Bank and the International Monetary Fund (IMF), and received \$7 billion as loan to manage the crisis. (The International Bank for Reconstruction and Development (IBRD) and International Monetary Fund (IMF) were established by delegates at the Bretton Woods Conference in 1944 and became operational in 1946.

LIBERALISATION

- Liberalisation was introduced to put an end to the restrictions and open various sectors of the economy.
- Sectors which received greater attention in and after 1991 are in industrial sector, financial sector, tax reforms, foreign exchange markets and trade and investment.

(I) Deregulation of Industrial Sector

- In India, regulatory mechanisms were enforced in various ways: (i) Industrial licensing. (ii) Private sector was not allowed in many industries (iii) some goods could be produced only in small scale industries, and (iv) controls on price fixation and distribution of selected industrial products.
- The reform policies introduced in and after 1991 removed so many restrictions. Industrial licensing was abolished for almost all products. (except alcohol, cigarettes, hazardous chemicals etc.)
- The only industries which are now reserved for the public sector are a part of defence equipment, atomic energy generation and railway transport.
- Many goods produced by small-scale industries have now been de reserved.

- In many industries, the market has been allowed to determine the prices.

(II) Financial Sector Reforms

- Financial sector includes financial institutions, such as commercial banks, investment banks, stock exchange operations and foreign exchange market.
- The financial sector in India is regulated by the Reserve Bank of India (RBI).
- One of the major aims of financial sector reforms is to reduce the role of RBI from regulator to facilitator of financial sector.
- The reform policies led to the establishment of private sector banks, Indian as well as foreign.
- Foreign Institutional Investors (FII), such as merchant bankers, mutual funds and pension funds, are now allowed to invest in Indian financial markets.
- Foreign investment limit in banks was raised to around 50 per cent. Those banks which fulfil certain conditions have been given freedom to set up new branches without the approval of the RBI.

(III) Tax Reforms

- Tax reforms are concerned with the reforms in the government's taxation and public expenditure policies, which are collectively known as fiscal policy.
- There are two types of taxes: direct and indirect.
- Direct taxes consist of taxes on incomes of individuals, as well as, profits of business enterprises. Indirect taxes are taxes levied on commodities.
- The rate of corporation tax, which was very high earlier, has been gradually reduced.
- Recently, the Parliament passed a law, Goods and Services Tax Act 2016, to simplify and introduce a unified indirect tax system in India.
- This law came into effect from July 2017.
- GST expected to generate additional revenue for the government, reduce tax evasion and create 'one nation, one tax and one market'.

(IV) Foreign Exchange Reforms

- The first important reform in the external sector was made in the foreign exchange market. In 1991, as an immediate measure to resolve the balance of payments crisis, the rupee was devalued (decrease in the value of home currency in the international market due to the deliberate action taken by the government) against foreign currencies.
- It also set the tone to free the determination of rupee value in the foreign exchange market from government control.
- It led to an increase in the inflow of foreign exchange.
- Now, more often markets determine exchange rates based on the demand and supply of foreign exchange.

(V) Trade and Investment Policy Reforms:

- Liberalisation of trade and investment policy was initiated to increase international competitiveness of industrial production and also foreign investments and technology into the economy.
- The aim was also to promote the efficiency of local industries and adoption of modern technologies.
- In order to protect domestic industries, India was following a regime of quantitative restrictions on import.
- The trade policy reforms aimed at (i) dismantling of quantitative restrictions on imports and exports (ii) reduction of tariff rates and (iii) removal of licensing procedures for imports.
- Import licensing was abolished except in case of hazardous and environmentally sensitive industries.
- Quantitative restrictions on imports of manufactured consumer goods and agricultural products were also fully removed from April 2001.
- Export duties have been removed to increase the competitive position of Indian goods in the international markets.

PRIVATISATION

- It implies shedding of the ownership or management of a government owned enterprise.
- Government companies are converted into private companies in two ways
 - (i) by withdrawal of the government from ownership and management of public sector companies.
 - (ii) by outright sale of public sector companies.
- Privatisation of the public sector enterprises by selling off part of the equity of PSEs to the public is known as disinvestment.

GLOBALISATION

- Globalization is generally refers to the integration of the economy of the country with the world economy.
- It involves creation of networks and activities which eliminates economic, social and geographical boundaries.
- Outsourcing is one of the important outcomes of the globalisation process.
- In outsourcing, a company hires regular service from external sources.
- As a form of economic activity, outsourcing has widely enlarged.
- Many of the services such as voice-based business processes (popularly known as BPO or call centres), record keeping, accountancy, banking services, music recording, film editing, book transcription, clinical advice etc outsourced by companies in developed countries to India.
- The low wage rates and availability of skilled manpower in India have made it a destination for global outsourcing in the post-reform period.

INDIAN ECONOMY DURING REFORMS: AN ASSESSMENT

It is 30 years since the New Economic Policy was introduced in India. Prepare a debate report on its impact on Indian economy

A debate was conducted in our class in the last week regarding the impact of New Economic Policy. The students were divided into two groups one group supported the NEP Other group opposed the NEP.

Arguments for NEP

- There has been increase in the overall GDP in the reform period. For example it was 5.6 per cent in 1980-1991 and increased to 8.2 per cent during 2007–12.
- The opening up of the economy has led to rapid increase in foreign direct investment and foreign exchange reserves. For example, FDI was US \$100 millions in 1990-91 But it increased to US \$30 billion in 2017-18.
- There has been steady growth in service sector which is considered to be a positive sign of economic growth.
- The process of disinvestment has helped the country to overcome fiscal deficit.
- Moreover this process improved the performance of the public sector undertakings.
- Outsourcing is a positive effect of NEP. It has created more employment opportunities
- Cheaper import has resulted in creating an opportunity to consume variety of products produced in different parts of the world.
- The NEP has benefited our country not only in terms of trade but also in aid We have got aid for various projects from different parts of the world.

Arguments Against NEP

- The implementation of NEP couldn't generate sufficient employment opportunities at desired level. The growth rate has been decelerating in agriculture.
- The removal of fertiliser subsidy had led to increase in cost of production.
- Reduction in import duties on agricultural products and removal of MSP has, made our farmers to face increased international competition.
- Decreasing demand for domestic industrial goods and cheaper imports have resulted in stiff competition for domestic manufactures.
- The assets of PSUs have been undervalued and sold to private sector. Thus, there has been substantial loss to the government.
- Fiscal policy reforms has a negative impact on development and welfare expenditure.

Conclusion-The introduction of NEP has produced positive as well as negative results for India and other countries. During implementation of policies the government should safeguard the interests of every sections of the society and there should be simultaneous growth of each sector of the economy.

World Trade Organisation (WTO):

- The WTO was founded in 1995 as the successor organization to the General Agreement on Trade and Tariff (GATT). ,GATT was established in 1948.
- WTO is expected to establish a rule-based trading regime in which nations cannot place arbitrary restrictions on trade.

- The purpose of WTO is to enlarge production and trade of services, to ensure optimum utilization of world resources and to protect the environment.

New Economic Policy (NEP) consisted of two groups:

- The stabilisation measures and the structural reform measures.
- Stabilisation measures are short-term measures, intended to correct some of the weaknesses in the balance of payments and to bring inflation under control.
- Structural reform policies are long-term measures, aimed at improving the efficiency of the economy and increasing its international competitiveness by removing the rigidities in various segments of the Indian economy.

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CHAPTER-4 POVERTY

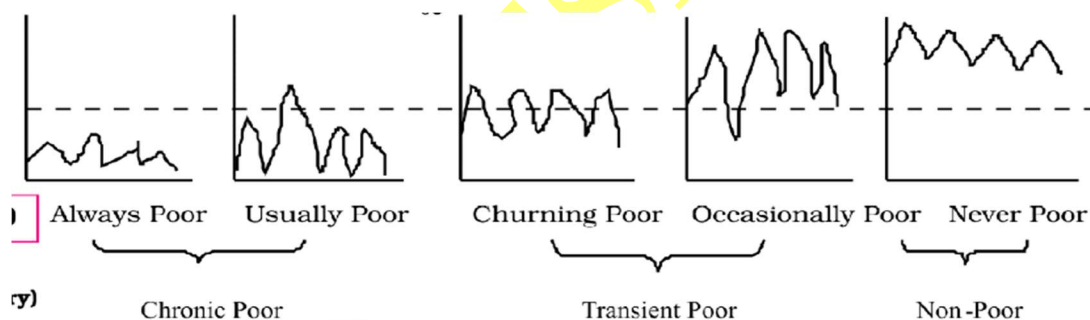
WHO ARE THE POOR?

- Poor people are those who lack basic needs of life. Starvation and hunger are the key features of the poorest households.
- The poor lack basic literacy and skills and hence have very limited economic opportunities.
- Poor people also face unstable employment. Malnutrition is alarmingly high among the poor.
- Ill health, disability or serious illness makes them physically weak. They borrow from moneylenders, who charge high rates of interest that lead them into chronic indebtedness.
- The pattern of development in the five year plans envisaged the upliftment of the poorest of the poor (Antyodaya)
- Economists identify the poor on the basis of their occupation and ownership of assets

HOW ARE POOR PEOPLE IDENTIFIED?

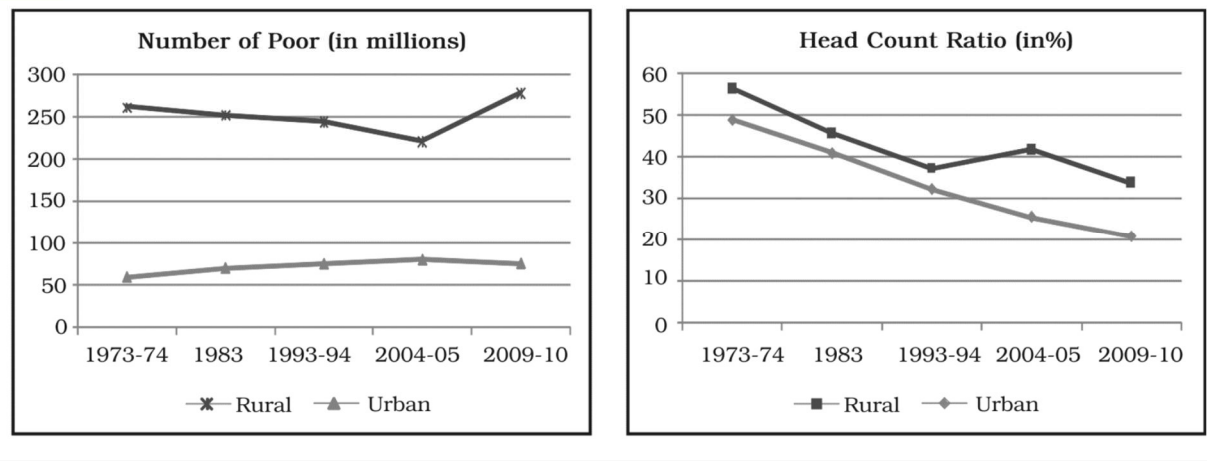
- In pre-independent India, Dadabhai Naoroji was the first to discuss the concept of a Poverty Line using 'jail cost of living'.
- In post-independent India, there have been several attempts to work out a mechanism to identify the number of poor in the country.
- For the purpose of defining poverty, divide people into two categories; the poor and the non-poor and the poverty line separates the two.
- Categorising Poverty: There are many ways to categorize poverty-always poor and usually poor, grouped together as the chronic poor (eg. casual workers).
- Churning poor who regularly move in and out of poverty. (Small farmers and seasonal workers) and the occasionally poor, who are rich most of the time but may sometimes have a patch of bad luck, they together called transient poor.
- Always poor and usually poor together called chronic poor.

- 8 ➤ churning poor and occasionally poor together called transient poor
- The Poverty Line:
- Poverty line is an imaginary line below which a certain section of the people unable to meet the basic needs of life.
 - The official data on poverty is made available to the public by the the NITI Aayog. It is estimated on the basis of consumption expenditure data collected by the National Sample Survey Office (NSSO).
 - There are many ways of measuring poverty. One way is to determine it by the monetary value (per capita expenditure) of the minimum calorie intake.
 - It was estimated that at 2,400 calories for a rural person and 2,100 for a person in the urban area. Based on this, in 2011-12, the poverty line was defined for rural areas as consumption worth Rs 816 per person a month and for urban areas it was Rs 1,000.
 - The government uses Monthly Per Capita Expenditure (MPCE) as proxy for income of households to identify the poor.
 - Economists state that a major problem with MPCE mechanism is that it groups all the poor together and does not differentiate between the very poor and the other poor.
 - The existing mechanism for determining the Poverty Line does not take into consideration of social factors such as illiteracy, ill health, lack of access to resources, discrimination etc.



THE NUMBER OF POOR IN INDIA

- When the number of poor is estimated as the proportion of people below the poverty line, it is known as 'Head Count Ratio'.
- The official data on poverty is now made available to the public by the NITI Aayog. It is estimated on the basis of consumption expenditure data collected by the National Sample Survey Office (NSSO).
- In India for the years 1973-2012. In 1973-74, more than 320 million people were below the poverty line. In 2011-12, this number has come down to about 270 million.
- In terms of proportion, in 1973-74, about 55 per cent of the total population was below the poverty line. In 2011-12, it has fallen to 22 per cent.



WHAT CAUSES POVERTY?

The causes of poverty lie in the institutional and social factors in the life of the poor. The main victims of caste, religious and other discriminatory practices are poor. Poverty can be caused as a result of

- (i) social, economic and political inequality
- (ii) social exclusion
- (iii) unemployment
- (iv) indebtedness
- (v) unequal distribution of income and wealth.

Economical-wide problem consists of (i) low capital formation (ii) lack of infrastructure (iii) lack of demand (iv) pressure of population (v) lack of social/welfare nets. Poverty is also closely related to nature of employment.

Unemployment or under employment and the casual and nature of work in both rural and urban areas that compels indebtedness. Poverty is a multi-dimensional challenge for India that needs to be addressed on a war footing.

POLICIES AND PROGRAMMES TOWARDS POVERTY ALLEVIATION

The Indian Constitution and five year plans state social justice as the primary objective of the developmental strategies of the government. The government's approach to poverty reduction was of three dimensions.

(i) Growth oriented approach-It is based on the expectation that the effects of economic growth leads to rapid increase in gross domestic product and per capita income would spread to poor sections of society.(Trickle down effect)

(ii) Expanding self-employment and wage employment programmes are being considered as the major ways of addressing poverty.

- Examples of self-employment programmes are Rural Employment Generation Programme (REGP), Prime Minister's Rozgar Yojana (PMRY) and Swarna Jayanti Shahari Rozgar Yojana (SJSRY)
- SJSRY mainly aims at creating employment opportunities both self employment and wage employment in urban areas.
- Swarnajayanti Gram Swarozgar Yojana (SGSY) has now been restructured as National Rural Livelihoods Mission (NRLM).

- 10.
- Food for Work programme.
 - The government has a variety of programmes to generate wage employment for the poor unskilled people living in rural areas.
 - In August 2005, the Parliament passed a new Act to provide guaranteed wage employment to every rural household. It is known as Mahatma Gandhi National Rural Employment generation programme.

(iii) To provide minimum basic amenities to the people. Expanding self employment and wage employment programmes

- Programmes under this approach are expected to supplement the consumption of the poor, create employment opportunities and bring about improvements in health and education.
- Three major programmes aim at improving the food and nutritional status of the poor are Public Distribution System, Integrated Child Development Scheme and Midday Meal Scheme.
- Pradhan Mantri Gram Sadak Yojana, Pradhan Mantri Gramodaya Yojana, Valmiki Ambedkar Awas Yojana are started in developing infrastructure and housing conditions.
- The government also has a variety of other social security programmes to help a certain specific groups. eg: National Social Assistance Programme .
- The government has also introduced a few schemes to provide health insurance to poor people.eg: Pradhan Mantri Jan-Dhan Yojana (2014)

POVERTY ALLEVIATION PROGRAMMES – A CRITICAL ASSESSMENT

- Government introduced various strategies to alleviate poverty but hunger, malnourishment, illiteracy and lack of basic amenities continue to be a common feature in many parts of India.
- Due to unequal distribution of land and other assets, the benefits from direct poverty alleviation programmes have been appropriated by the non-poor.
- High magnitude of poverty, the amount of resources allocated for poverty alleviation programmes were not sufficient.
- Some officials are ill motivated, inadequately trained, corruption prone etc resulted inadequate implementation of the programme.
- It is very necessary to identify poverty stricken areas and provide infrastructure such as schools, roads, power, telecom, IT services, training institutions etc. to this area.

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CHAPTER-8

INFRASTRUCTURE

Infrastructure.

Infrastructure refers to the basic or core supporting system which helps an economy to function properly. Infrastructure consists of roads, communication, transport facilities, industries, bridges, dams, electricity, hospitals, and schools. These facilitate economic development by encouraging activities like investment, production. Infrastructure is broadly divided into two categories:

1. **Economic Infrastructure:** Economic infrastructure consists of components that are helpful in production and distribution. Productivity of the economy is raised through quality of resources and which serves as support system for growth of the economy. Some examples of economic infrastructure are: communication, transportation, energy, financial institutions. A developed economic infrastructure will pave the way for better economy.
2. **Social Infrastructure:** Social infrastructure strives to enhance the quality of human capital. It includes the hospitals, housing facilities, educational institutions, nursing homes. The presence of social infrastructure helps in improving human productivity which improves the standards of living.

Economic infrastructure and social infrastructure are complementary to each other. One works for economic growth while social infrastructure aims to enhance the quality of life. Both these have a positive effect on the prosperity of the nation.

RELEVANCE OF INFRASTRUCTURE

Infrastructure is the supporting system which directly or indirectly helps agriculture, industry, trade and commerce. Schools, colleges, universities and other educational institutions provide wide variety of education and training which improve the quality of life and efficiency in works and which in turn increases the productive capacity of a country. Hospitals, Primary health centres, community health centres, medical colleges etc. protect us from diseases which increases the efficiency of work. Modern agriculture and industry depends on dams, electricity, roads, railways, ports, airports, power station, oil and gas pipeline, post and communication, banks etc. So infrastructure is most important engine of economic growth and development of a country.

THE STATE OF INFRASTRUCTURE IN INDIA

The state of infrastructure is poor in India as compared with other countries. Government investment in infrastructure is inadequate. It is only 5 percent of the GDP in 2003. Infrastructure facilities in rural area are very poor. As per census

2001, 44 per cent of the rural households do not have electricity connection. 43 per cent of the rural households still use kerosene. 90 per cent of the rural households use bio-fuels for cooking. 24 per cent have tap water availability. 76 percent of the population drinks water from open sources. 80 per cent rural households do not have improved sanitation. So both public and private sector have an important role in the development infrastructure. Government investment in infrastructure as percentage of GDP has increase in 2013 as 30.

ENERGY

Energy is essential for agriculture and industry. It is inevitable for households. There are commercial and non-commercial sources of energy. Coal, petroleum and electricity are called commercial sources of energy. They are to be paid and generally exhaustible. Firewood, agricultural waste and dried dung are called non-commercial sources of energy. They are freely found in nature and generally renewable. The consumption of commercial energy is consists of 74 per cent and the non-commercial energy is only 26 per cent in India. The largest share of consumption is coal at 54 per cent, oil is 32 per cent, natural gas is 10 per cent and hydro energy is 2 per cent. Recently, the consumption of oil and gas has been increasing. The consumption of energy for agriculture purpose has been increasing throughout, but transport sector has been decreasing.

Both commercial and non-commercial sources of energy such as coal, petroleum, electricity, firewood, agricultural waste etc. are known as conventional/traditional sources of energy. Solar energy, wind energy and tidal energy are known as non-conventional sources of energy.

POWER/ELECTRICITY

Power, commonly called electricity is the most important components of infrastructure which determines the economic development. For 8 per cent GDP growth power supply should grow at 12 per cent per annum. Thermal, Hydel, Wind and Nuclear power are the sources of electric power. In India, in 2018, thermal sources accounted for 82 per cent of the power generation capacity. Hydel power accounted for 8.5 per cent, while nuclear power accounted for only 2.5 per cent.

CHALLENGES IN THE POWER SECTOR

The power sector faces some problems. The main problems face by power sector in India is listed below:

1. **Transmission loss:** A huge amount of electricity is lost by transferring electricity from one station to another. Over 20 per cent of energy is lost by transmission.

- 2.¹³ Insufficient capacity: Another problem faced by this sector is that the installed capacity is not sufficient for 7-8 per cent GDP growth.
3. Inefficient SEBs: The inefficiency of State Electricity Boards is the major problem. Due to transmission, distribution and wrong pricing system, SEBs incurs losses more than Rs 500 billion. In addition, a huge amount of electricity is stolen.
4. Power cuts: Continues power cut in different part of the country is a major problem. High power tariffs and inefficient tariff collection are another challenges faced by power sector.
5. Shortage of raw materials: The shortage of raw materials and coal supplies are another problems faced by especially, in thermal power plants. However, the demand for electricity is day by day increasing due the growth of population and growing demand for goods and services. A research for an alternative source of energy is essential to meet the growing demand. More public investment and private is need. More use of renewable energy sources is reduces the consumption non-renewable energy.

HEALTH

Health does not mean absence of diseases. It is a state on physical, mental, social and emotional well being. Government has been investing huge amount on health infrastructure. We have a three-tier health care system-primary, secondary and tertiary sector. Primary sector consists of Primary Health Centres (PHCs), Community Health Centres (CHCs) and Sub-centres. Hospital which have better facilities are called Secondary sector. The premier institutions which provide education, research and specialized health care are known as Tertiary sector. Government has been spending huge amount on health infrastructure. Since Independence, there has been a significant expansion in the physical provision of health services. During 1951–2018, the number of government hospitals and dispensaries together increased from 9,300 to 53,800 and hospital beds from 1.2 to 7.1 lakhs. Also, nursing personnel increased from 18,000 to 30 lakh and allopathic doctors from 62,000 to 11.5 lakhs. The expansion of health infrastructure has resulted in the eradication of smallpox, Guinea worms and the near eradication of polio and leprosy.

Private sector has a significant role in the development of health infrastructure, medical education, research and training. More than 70 per cent of the hospitals and nearly 60 per cent of the dispensaries are run by private sector. They provide healthcare for 80 per cent outpatients and 46 percent inpatients. Indian System of Medicine (ISM) consists of six systems. They are Ayurveda, Yoga, Unani, Siddha, Naturopathy and Homeopathy known as AYUSH.

14 Indicators of Health and Health Infrastructure—A Critical Appraisal:

- The health status of a country can be assessed through indicators, such as infant mortality and maternal mortality rates, life expectancy and nutrition levels, along with the incidence of communicable and non-communicable diseases. These indicators show the poor performance of India in Health sector.
- India's expenditure on health sector is 3.7 per cent of the total GDP. This is very low compared to other developed and developing countries.
- India has about one-fifth of the world's population but it bears a frightening 20 per cent of the global burden of diseases (GBD). (GBD is an indicator used by experts to gauge the number of people dying prematurely due to a particular disease, as well as, the number of years spent by them in a state of 'disability' owing to the disease).
- In India only 38 per cent of the PHCs have the required number of doctors and only 30 per cent of the PHCs have sufficient stock of medicines.
- Though 70 per cent of India's population lives in rural areas, only one-fifth of its hospitals (including private hospitals) are located in rural areas. Rural India has only about half the number of dispensaries.

Women's Health:

- Women constitute about half of the total population in India.
- The deterioration in the child sex ratio in the country from 927 in 2001 to 919 in 2011.
- Five per cent of girls aged between 15-19 years are not only married but have already borne children at least once.
- More than 50 per cent of married women in the age group of 15-49 years have anaemia and nutritional anaemia caused by iron deficiency.

CHAPTER-9

ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

Environment is defined as the totality of planetary inheritance and the totality of all resources. It includes all the biotic (living things) and abiotic (non-living things) factors. The environment has four important functions. They are:

1. **Supply resources:** One the important function of environment is that it supplies both the renewable and non-renewable resources.
2. **Assimilates waste:** Human being is producing millions of tonnes of waste every day. The environment assimilates all the waste.
3. **Sustains life:** Without environment life is not possible. The environment sustains life.

15 4. **Aesthetic services:** The last but not least, the environment provides aesthetic services like scenery.

The environment has limited **carrying capacity** to supply resources and accumulate waste. The carrying capacity implies that the resources extraction is not above the rate of regeneration of the resource and the wastes generated are within the assimilating capacity of the environment. The waste generated are beyond the absorptive capacity of the environment. **Absorptive capacity** means the ability of the environment to absorb degradation.

STATE OF INDIA'S ENVIRONMENT

India is rich in natural resources. She has hundreds of rivers and tributaries. The black soil of the Deccan Plateau is suitable for cotton cultivation. The Indo-Gangetic plains spread from the Arabian Sea to the Bay of Bengal are most fertile land for cultivation. 30 per cent of the land area is covered with green forest. India has large deposit of iron ore, coal and natural gas. Plenty of mineral resources like iron ore, bauxite, copper chromate, diamonds, gold, lead lignite, manganese, zinc, uranium etc.

In addition to the developmental activities of India, the rapid growth of population, affluent consumption and high production standard etc. placed excessive pressure on environment resulted environmental crisis like **global warming** and ozone depletion, air pollution, water contamination, soil erosion, deforestation and wildlife extinction. The priority issues identified in India are:

1. Land degradation
2. Bio-diversity loss
3. Air pollution
4. Management of fresh water
5. Soil waste management. **What is global warming? Discuss the priority issues.**

Land in India suffers from varying degrees of and types of degradation. The following are the factors responsible for land degradation:

1. Loss of vegetation occurring due to deforestation.
2. Unsuitable fuel wood and fodder extraction.
3. Shifting cultivation.
4. Encroachment into forest lands.
5. Forest fires and over grazing.
6. Non-adoption of adequate soil conservation measures.
7. Improper crop rotation.
8. Indiscriminate use of agro-chemicals such as fertilizers and pesticides.
9. Improper planning and management of irrigation systems.
10. Extraction of ground water in excess of the recharge capacity.
11. Open access resource.
12. Poverty of the agriculture-dependent people.

¹⁶ The air pollution due to high vehicle population and industrialization of the nation challenges India's environment. Central Pollution Control Board (CPCB-1974) identified 17 categories of industries polluting significantly.

SUSTAINABLE DEVELOPMENT

The concept of sustainable development was emphasized by the United Nations Conference on Environment and Development

(UNCED). It defines sustainable development as the development that meets the need of the present generation without compromising the ability of the future generation to meet their own needs'. It is the development that can sustain itself. It considers the protection of environment.

The **Brundtland Commission** emphasizes that we should leave to the next generation a stock of 'quality of life' assets no less than what we have inherited. According to Herman Daly to achieve sustainable development the following needs to be done:

1. Limiting the human population to a level within the carrying capacity of the environment like a 'plimsoll line' of the ship.
2. Technological progress should be input efficient and not input consuming.
3. Renewable resources should be extracted on a sustainable basis i.e., the rate of extraction should not exceed the rate of generation.
4. For non-renewable resources the rate of depletion should not exceed the rate of creation of renewable substitutes and
5. Inefficiencies arising from pollution should be corrected.

STRATEGIES FOR SUSTAINABLE DEVELOPMENT

We should take necessary steps to protect the environment along with development. The following are the strategies for sustainable development.

1. **Use of Non-conventional Sources of energy:** The use of non-conventional sources of energy reduces the risk of pollution. Wind mills can provide electricity without any adverse impact on the environment. Solar energy is extremely useful in remote areas. Wave energy plants can be set up in coastal areas. All such non-conventional energy sources are free from pollution.
2. **Use of LPG and Gobar Gas:** The use of LPG, Gobar Gas and Bio-gas in rural area etc. reduces the household pollution.
3. **Use of CNG:** The use of Compressed Natural Gas as fuel in transportation system reduces the air pollution.
4. **Mini-hydel Plants:** Another strategy of sustainable development is that the establishment of mini-hydel power plants in mountainous regions. These plants meet local demands and eco-friendly.
5. **Traditional Knowledge and Practice:** We had a good knowledge of traditional system of health care, agriculture and transportation. The

practice of traditional knowledge such as Ayurveda, Unani, Tibetan and folk system of medicine etc. environment friendly treatment.

6. **Bio-composting:** Modern agriculture uses large amount of chemicals which adversely affect the environment. So the use biocomposting is the better strategy of sustainable development.
7. **Bio-pest control:** Similarly, modern agriculture uses large amount of pesticides. The use of bio-pest reduces the pressure on environment.

Environment and development are interrelated and interdependent. The protection of environment and development should go hand in hand. So the implementation and practice of strategies of Sustainable development would ensure a balanced growth on future generations.

RAJESH.S

CHAPTER-1 INTRODUCTION

ECONOMICS

Economics is a Social Science, it studies the Economic behaviour of Man It studies the relationship between ends and scarce resources, which have alternative uses. Adam Smith is considered as the father of Economics.

Why there are economic problems?

Scarcity is the root cause of all economic problems.

Economic problems arise because:

- ✂ Human wants are unlimited.
- ✂ Resources are limited to satisfy these wants.
- ✂ Resources have alternative applicability.

Subject matter of Economic Theory:

- ✂ Consumption
- ✂ Production
- ✂ Exchange
- ✂ Distribution
- ✂ Public Finance etc are the Subject matter of Economic Theory

WHAT IS STATISTICS?

It is a Science and branch of Mathematics. It deals with Collection, Classification Tabulation, Analysis, Presentation and Interpretation of Data.

The word Statistics is used both in Singular and Plural senses. In Singular sense Statistics means the methods used for collection, Classification, Interpretation and Presentation of numerical data. In Plural sense Statistics mean numerical data systematically collected.

FUNCTIONS OF STATISTICS

- 1.It simplifies complexities.
- 2.It presents the data in a definite form.
3. It presents the data in a precise form.
- 4.It helps condensation of data.
- 5.It enables comparison of data.
- 6.It helps in testing.
- 7.It helps in prediction.
- 8.It helps in formulation of policies.
9. It enlarges human experience.

LIMITATION OF STATISTICS

- 1.Statistics Studies Only Quantitative Data
- 2.Statistics does not study individual cases.
- 3.Statistical results are true only on an average
- 4.Statistics does not reveal the entire story of the problem.
- 5.Statistical methods can be used only by an Expert.

DISTRUST OF STATISTICS

By distrust we mean

1. Lack of confidence in statistical statements and statistical methods.
2. Statistics can prove anything.
3. Whether statistics is good or bad depend on its use.

USES OF STATISTICS IN ECONOMICS:

1. Statistics is an inevitable tool in the hands of Economists.
2. Formulation of Economic policies.
3. Helps for Economic planning.
4. Complex Economic data can be reduced.

QUANTITATIVE AND QUALITATIVE DATA: The data which can be Measurable is called quantitative data. Eg. Price, Height, Weight, Income etc. The data which cannot be measurable is called Qualitative data. Eg. Honesty, aptitude, beauty etc.

CHAPTER 2

COLLECTION OF DATA

Collection: It is the process of collecting data or information from different sources. A place from data obtained is called data source. Statistical data can be obtained from two sources. They are primary and secondary sources. Distinguish between primary and secondary data

PRIMARY DATA	SECONDARY DATA
It is first hand in use.	It is second hand in use.
It is collected from an enquiry.	It is collected from published sources.
It is in the form of raw materials.	It is in the form of finished products.

What are the qualities of a good questionnaire?

The main qualities of a good questionnaire are the following.

- Questionnaire should not be too long.
- A series of questions should move from general to specific.
- The questionnaire should be easy to understand and avoid ambiguous or difficult words.
- The questions should be arranged in an order such that the person answering should feel comfortable.

- The questions should not be ambiguous. They should enable the respondents to answer quickly, correctly and clearly.
- The questions should not use double negatives.
- The questions should not be a leading question, which gives a clue about how to answer.
- The questions should be precise and clear.
- The questionnaire should include both open ended and closed ended questions.

MODE OR METHODS OF DATA COLLECTION

There are three basic of collecting primary data. They are the following

- 1) Personal interview: This method is used when the researcher has to access all the members. The main merits and demerits of the method are the following.

ADVANTAGES	DISADVANTAGES
Highest response rate	Most expensive
Allows all types of questions	More time taking
Better for using open ended questions.	Possibility of influencing respondents
Allows clarifications to ambiguous questions	

- 2) Mailing questionnaire: The data in a survey are collected by mail, such method of databases collection is called mailing questionnaire. Its advantages and disadvantages are as follows.

ADVANTAGES	DISADVANTAGES
Least expensive	Cannot be used by illiterates
Only method to reach remote areas	Long response time
No influence on respondents	Does not allow clarifications to ambiguous questions
Maintains anonymity of respondents	Reactions can't be watched
Best for sensitive questions	

- 3) Telephone interview: In a telephone interview, the investigator asks questions over the telephone. Its advantages and disadvantages are as follows.

ADVANTAGES	DISADVANTAGES
Relatively low cost	Limited use
Relatively less influence on respondents	Reactions can't be watched
Relatively high response rate	Possibility of influencing the respondents

PILOT SURVEY

When the questionnaire is ready, it is advisable to conduct a try out with a small group of Population is known as pilot survey or pre testing of the questionnaire. It's advantages are the following

- It help us to access the suitability of the questionnaire.
- It help us to identify the drawbacks and shortcomings of the questionnaire.
- It help us to calculate survey cost and time.
- It help us to pre testing of the questionnaire.

CENSUS OR COMPLETE ENUMERATION: A survey which includes every element of population is called census of complete enumeration. In India census are conducted by Registrar General Of India(R.G.I.).In India census ,which carried out every ten years. Last census of India was held in the year 2011.According to the 2011 census 'India's population is 121.09 crores. The main advantages and disadvantages of census are the following.

ADVANTAGES	DISADVANTAGES
Additional information is to be obtained	More time taking
More reliable information obtained	More expensive
Covers the entire population	More enumerators needed

Population

Population or the Universe in statistics means totality of the items under study. A population is always all the individuals/items who possess certain characteristics (or a set of characteristics), according to the purpose of the survey.

SAMPLE SURVEY: Data or information is collected from samples only, such method of data collection is called sample survey. A sample refers to a group or section of population from which information is to be obtained. A good sample is generally smaller than population and give reasonably accurate information

about the population. In India sample surveys are conducted by NSSO. Most of the surveys are sample surveys because of the following reasons.

- i. It provides reasonably reliable and accurate information.
- ii. It needed lower cost and shorter time.
- iii. More detailed information can be collected.
- iv. Smaller team of enumerators is needed

According to the selection of samples .sample survey divided into two. They are the following.

- **RANDOM SAMPLING:** In the random sampling every individual has an equal chance of being selected as a sample. The individuals who are selected are just like the ones who are not selected. In random sampling , samples are selected with the help of random number tables or Lott's so this method is also called lottery method.
- **NON RANDOM SAMPLING:** In non random sampling all the unit of the population do not have an equal chance of being selected as sample. The convenience or judgement of the investigator plays an important role in the selection of the sample.

SAMPLING ERRORS: The difference between the actual value of parameter of the population and it's estimate is the sampling error. It is possible to reduce the magnitude of sampling error by taking a larger sample.

NON SAMPLING ERRORS: Non sampling errors are more serious than sampling errors because sampling error can be minimised by taking larger sample. It is difficult to minimise non sampling errors, even taking a large sample. Some of the non sampling errors are:

- Errors in data acquisition: This type of error arises from recording of incorrect responses.
- Non response errors: It occurs if an interviewer is unable to contact a person listed in the sample .
- Sampling bias: Sampling bias occurs when the investigator performs biased in the selection of samples.

List out some data collecting agencies in India.

- Central statistical organisation. (CSO)
- National sample survey organisation.(NSSO)
- Registrar general of India(RGI)
- Directorate general of commercial intelligence and statistics(DGCIS)
- Labour bureau.

CHAPTER. -3

ORGANISATION OF DATA

Organisation: It is a process of arranging or organising things into groups or classes based on some criteria. organisation help us

- To condense data for easy understanding.
- To help comparison.
- To eliminate unnecessary details.
- To make decision making possible.

Types of organisation.

- **Chronological organisation:** The organisation based on time is called chronological organisation. The chronologically organised data is called time series.
- **Spatial organisation:** The data are classified with reference to geographical locations such as countries, States, cities, districts, etc.
- **Quantitative organisation:** The data organised with reference to quantities are called quantitative organisation.
- **Qualitative organisation:** The data organised with reference to qualities are called qualitative organisation.

VARIABLES: variables are anything their values are changing. They are broadly classified into two types.

- **Discrete variables:** The variables which receive whole numbers as their values only, such variables are called discrete variables. Eg. Cricket score, family size.
- **Continuous variables:** A continuous variable can take any numerical value. It may take integral values, fractional values, irrational values

FREQUENCY ARRAY: The arranged form of discrete variables is called frequency array.

FREQUENCY DISTRIBUTION: It is a comprehensive way to classify raw data of a quantitative variable. while preparing a frequency distribution, the following four questions need to be addressed

- How many classes should we have?
- What should be the size of each class?
- How should we determine the class limits?
- How should we get the frequency for each class?

RANGE: It is the difference between the largest and the smallest values of variable.

Range=largest value – smallest value

UPPER CLASS LIMIT:The highest value of a class is called upper class limit.

LOWER CLASS LIMIT:The lowest value of a class is called lower class limit.

CLASS INTERVAL:The difference between upper class limit and lower class limit is called class interval.

CLASS MARK OR CLASS MID POINT:The average of upper class limit and lower class limit is called class mark or class mid point.

INCLUSIVE AND EXCLUSIVE CLASS:Under inclusive method upper class limit of a class included in the class interval .

Under exclusive method upper class limit of a class is excluded from the class interval.

Loss of information:Statistical calculations are based only on the values of class mark and not on the values of the observations in that class.so other values of the class are not considered .It is called loss of information.

UNIVARIATE AND BIVARIATE FREQUENCY DISTRIBUTION: The frequency distribution of a single variable is called univariate frequency distribution.

A Bivariate frequency distribution is the frequency distribution of two variables.

STEPS REQUIRED FOR THE CONVERSION OF INCLUSIVE INTO EXCLUSIVE:

1. Find the difference between the lower limit of the second class and the upper limit of the first class.
2. Divide the difference obtained in by two.
3. Subtract the values obtained in from lower limits of all classes.
4. Add the value obtained in to upper limits of all classes.

CHAPTER 4 PRESENTATION OF DATA

PRESENTATION: It is the process of presenting voluminous data collected through different Statistical tools. There are generally three forms of presentation of data. They are

- Textual presentation
- Tabular presentation
- Diagrammatic or Graphical presentation.

TEXTUAL PRESENTATION OF DATA: In textual presentation, data are described within the text. When the quantity of data is not too large this form of presentation is most suitable.

TABULAR PRESENTATION: In tabular presentation, data are presented in rows and columns. The most important advantage of tabular presentation is that is used for further Statistical calculations and decision making.

PARTS OF A TABLE: There are eight functional parts of a Statistical table.

They are the following.

- Table Number:** It is assigned on the top of a table. It assigned for easy identification.
- Title:** It narrates about the content of the table.
- Captions OR Column headings:** At the top of each column in a table a designation is given.it is caption.
- Stubs OR Row headings:** The designation of a row is called stubs.
- Body of the table:** It is the main part of a table. It contains the actual data.
- Unit of measurement:** It shows the unit which is used to measure the figures in the table.
- Source:** It contains the source of the data presented in the table.
- Note:** It gives additional information about the table.

DIAGRAMMATIC PRESENTATION OF DATA. This is the third way of presentation. It provides the quickest understanding of actual situation. Diagrams maybe less accurate but are much more effective than tables in presenting the data. There are various kinds of diagrams.

Amongst them the important ones are the following.

- Geometric diagrams
- Frequency diagrams
- Arithmetic line graph.

GEOMETRIC DIAGRAMS: Simple bar diagrams, Multiple bar diagrams, Component bar diagrams, percentage bar diagrams, pie diagrams are come under this category.

- 1) **SIMPLE BAR DIAGRAM:** It comprises a group of equi spaced and equi width rectangular bars for each class of data. Height of the bar reads the magnitude of data.

- 2) **MULTIPLE BAR DIAGRAM:** Multiple bar diagrams are used for comparing two or more sets of variables.
- 3) **COMPONENT BAR DIAGRAM:** It is also called sub-divided bar diagram. It is very useful in comparing the sizes of different parts of data.
- 4) **PIE DIAGRAM:** It is a circle whose area is proportionally divided among the components it represents. It is also called pie chart.

FREQUENCY DIAGRAMS: Data in the form of grouped frequency distributions are generally represented by frequency diagrams. The following are the most commonly used frequency diagrams.

- 1) **HISTOGRAM:** It is a two dimensional diagram. It represents a continuous frequency distribution. It can be helpful in locating mode
- 2) **OGIVES OR CUMULATIVE FREQUENCY CURVE:** As there are two types of cumulative frequencies. They are less than and more than cumulative frequencies. An interesting feature of the two ogives together is that their intersection point gives the median.
- 3) **FREQUENCY POLYGON:** It is a plane bounded straight lines, usually four or more lines. It can be constructed with or without constructing of a histogram.
- 4) **FREQUENCY CURVE** The frequency curve is obtained by drawing a smooth free hand curve passing through the points of the frequency polygon as close as possible.

ARITHMETIC LINE GRAPH OR TIME SERIES GRAPH: It helps in understanding the trend, periodicity, etc. in a long time series data

Chapter-9

Use of Statistical Tools

STEPS TOWARDS MAKING A PROJECT

1. Identifying a problem or an area of study

At the outset, you should be clear about what you want to study. On the basis of your objective, you will proceed with the collection and processing of the data.

2. Choice of Target Group

The choice or identification of the target group is important for framing appropriate questions for your questionnaire.

3. Collection of Data

The objective of the survey will help you to determine whether the data collection should be undertaken by using primary method, secondary method or both the method. A first hand collection of data by using primary method can be done by

using a questionnaire or an interview schedule, which may be obtained by personal interviews, mailing/postal surveys, phone, email, etc.

4. Organisation and Presentation of Data

After collecting the data, you need to process the information so received, by organising and presenting them with the help of tabulation and suitable diagrams.

5. Analysis and Interpretation

Measures of Central Tendency (e.g. mean), Measures of Dispersion (e.g. Standard deviation), and Correlation will enable you to calculate the average, variability and relationship, if it exists among the variables.

6. Conclusion

The last step will be to draw meaningful conclusions after analysing and interpreting the results.

7. Bibliography

In this section, you need to mention the details of all the secondary sources, i.e., magazines, newspapers, research reports used for developing the project.

RAJESH.S