Chapter - 4.1

Poverty

Meaning of Poverty :

Poverty is the situation in which people do not get sufficient food, housing facility, education, necessary consumer goods and better health facilities. Due to lack of income people do not satisfy their necessary wants. In each country a proportion of population faces this problem. Thus, it is an important part development efforts of a country to satisfy the wants regarding necessacities.

Measurement of Poverty:

To estimate poverty that level of income is fixed which is necessary to satisfy the basic needs of human being. Such level of income is known as poverty line. People below this level of income are assumed to be poor. Due to inflation poverty line is modified time to time. In India "calorie consumption" is associated with poverty and people with lower calorie consumption to that standard are said be poor. According to Planning Commission, people getting calorie below 2400 in rural areas and below 2100 in urban areas are considered as poor. For this minimum calorie consumption of Rs. 49.63 per month per capita rural area and Rs. 56.64 per month per capita in urban area was considered necessary in 1973-74. In 1977-78 this amount decided was as Rs. 56.84 for rural area and Rs. 72.50 for urban area. At 2004-05 prices Rs. 359.9 for rural area and Rs. 523.2 for urban area were the amounts of expenditure decided by Planning Commission in this regard. In 2011-12, Rs. 27.20 per capita per day in rural area and Rs. 33.33 per capita per day in urban area were the levels of poverty line determined by the Planning Commission.

Ratio of number of poor persons to total population is known as poverty ratio of 'head count ratio'. Poverty percentage is calculated by multiplying head count ratio by 100 which shows that what percent of population is below poverty line. This approach of poverty measurement is defective because it considers all people below poverty line equal and thus it does not show the real condition of poor people. So, according to A.K. Sen, two stages should be used to measure the poverty. In the first stage, it should be found out that what is the income of different persons then a criterion should be used in terms of per capita income to estimate the poverty. Under second stage, the intensity of poverty should be estimated which shows poor are how much poor. Ozalar, Dutt and Ravelian used 'poverty gap ratio' and 'squared povert gap ratio' to estimate the poverty. These measures estimate the intensity of poverty. In Human Development Report, poverty is assumed to be the multidimentional phenomenon in which three factors should be considered (i) no longer life span, (ii) less education, and (iii) lower living

standard. Humane poverty index has been prepared on this basis. According to World Bank, if the per capita per day consumption expenditure is less than 1.25 American dollar, that person should be considered poor.

Capability measurement of poverty is also a measure of poverty in which three indicators are used. (i) ratio of low weight children aged less than 5 years, (ii) ratio of female illiteracy.

Report of Expert Group of Planning Commission on Poverty:

Due to different views on poverty measurement, Planning Commission appointed a committee in the headship of Suresh Tendulkar. who recommended the following points about the estimates of poverty line:

1. N.S.S.O. data on private consumption expenditure of families should be used to measure the poverty.

2. Real consumption pattern should be used instead of 'calorie consumption' to estimate the poverty line.

3. Committee recommended mixed recall period in palce of uniform recall period for the information of consumption expenditure. (like cloth, shoe, education, health, etc.)

4. Nonfood items (as cloths, shoes, permanent articles, education and health) should also be used along with food items.

5. Efforts have been made by the committee to provide group of commodities in consumption to the rural and urban population of the states which was proposed for the people of all India urban poverty line.

Types of Poverty:

According to relative and absolute poverty, poverty is of the following types:

1. Relative Poverty :

In relative poverty income distribution is used to measure it. People have income less than per capita average income in the country are said to be poor. This approach shows the degree of inequality in the income distribution. Relative poverty is measured by loreng curve and gini ratio. It is used in developed contries to measure the poverty.

2. Absolute Poverty:

Under this method minimum consumption level is fixed and thus number of poor persons is estimated. The concept of 'minimum calorie consumption' used in India, is the absolute measure of poverty.

Estimates of Poverty:

First of all estimates of poverty in India were given by B.S. Minhas, V.M. Dandekar, N.K. Rath, P.K. Vardhan and M.S. Ahluwalia. These economists prepared their on measures and estimated the poverty. According to B.S. Minhas 37.1%, P.K. Vardhan 54.0%, Dandekar and Rath 40.0% and Ahluwalia 56.5% was the poverty in India. These differences in poverty are due to difference in the definition of poverty given by these economists. According to Minhas, poverty in India decreased in 1956-57 to 1967-68 but according to, Ojha and Verdhan it increased in this period. According to Dandekar and Rath poverty decreased in 1960-61 to 1967-68. These estimates showed that poors were more in rural areas (particularly small and marginal farmers and agricultural labours). Rural poverty is in terms of low productivity and urban poverty is outflow of rural poverty. Planning Commission estimated poverty on the basis of consumption expenditure data collected by N.S.S.O. In 1973-74, rural poverty ratio was 56.4% and urban poverty ratio was 49.0%. In 1983-84, the poverty ratio decreased upto 45.7% and 40.80% in rural and urban areas respectively and further

decreased to 37.3% and 32.4% respectively in 1993-94. By new methodology of Tendulkar committee, 50.1% and 31.8% was the poverty ratio in rural and urban India in 1993-94. Clearly, rural poverty was more according to Tendulkar estimates than the estimates of Planning Commission. Table-1 shows the estimates of poverty according to Tendulkar methodology.

Table-1

Poverty Estimates in India (%)

Year	Rural	Urban	Total
1993-94	50.1	31.8	45.3
2004-05	41.8	25.7	37.2
2009-10	33.8	20.9	29.8
2011-12	25.7	13.7	21.9

Source: Planning Commission, GOI.

Table shows that rural poverty was 50.1% in 1993-94 which decreased upto 25.7% in 2011-12. Urban poverty was 31.8% in 1993-94 which decreased to 13.7% in 2011-12. In aggregate 45.3% was the poverty in India in 1993-94 which decreased to 21.9% in 2011-12.

It is also clear that rural poverty was more than urban poverty in all the referred years. Rural poverty decreased more rapidly than the urban poverty. Under Tendulkar methodology, mixed recall period was used for non-food items.

Table-2 shows the estimates of poverty in terms of poverty line and number of poors according to the Tendulkar methodology.

Table-2

Poverty Line and Numbers of Poor

Year	Poverty Line (in Rs.)		No. of Poor (in million)		
	Rural	Urban	Rural	Urban	Total
2004-05	446.8	578.8	326.3	80.8	407.1
2011-12	816.0	1000.0	216.5	52.8	269.3

Source : NITI Ayog

In 2004-05, poverty line was defined as Rs. 446.8 per capita per month in rural area and Rs. 578.8 per capita per month in urban area. In 2011-12 this amount of Rs. was Rs. 816.0 and 1000.00 for rural and urban areas respectively.

According to this definition of poverty, number of poor in rural area in 2004-05 was 326.3 million and in urban area it was 80.8 million. In 2011-12, no. of poor in rural area was 216.5 million and in urban area it was 52.8 million.

In period 2004-05 to 2011-12, rural poverty decreased rapidly due to rural development strategy under which various programmes were implemented. In this period poverty ratio increased in North-East states which shows the fact of imbalanced development. Poverty ratio decreased in rural areas and poverty became more skewed between urban and rural areas.

Regional Distribution of Poverty in India :

Different poverty ratios are there in different states of India. According to Tendulkar estimates, Table-3 shows the poverty in different states.

Table-3

Poverty Rates in Different Sates (%) : 2011-12

State	Rural	Urban	Aggregate
Bihar	34.06	31.23	33.74
Chhattisgarh	44.61	24.75	39.93
Jharkhand	40.84	24.83	36.96
M.P.	35.74	21.00	31.65
U.P.	30.40	26.06	29.43
Orissa	35.69	17.29	32.59

Source : Planning Commission : GOI

Table shows that Chhattisgarh is the poorest state. In this state rural poverty was 44.61% and urban poverty was 24.75%. Urban poverty was maximum in Bihar as 31.23% and rural poverty is maximum in Chhattisgarh as 44.61%.

Poverty ratio increased in North-East states in 2004-05 to 2011-12 which shows the unequal development. In this period, poverty ratio decreased upto 32.6% from 57.2% in 2004-05 in Orissa. In Bihar, this ratio was 54.5% in 2004-05 which became 33.7% in 2011-12. In 2004-05 to 2011-12 percentage of poverty decreased by 15.3%.

Expert Group on Poverty: Rangrajan Committee:

Expert group, headed by Rangrajan, was organized in 2012 in the background of conflicts about poverty line. This group was given two assignments:

(i) To determine poverty line and to estimate poverty in India, and

(ii) To examine differences in consumption estimates of National Accounts Statistics and N.S.S.O. The group suggested a method to estimate poverty. This method had following main points:

1. Fixation of non-food expenditures (nutrition, cloth, house rent, transport, etc.) in poverty line should be based on criteria.

2. In 2011-12, people who fulfill the standards of nutrition to estimate the expenditure on nutrition come into minimum 25-30% in rural area and into minimum 15-25% in urban area.

3. Rs. 1407 per capita per month in urban area and Rs. 972 per capita per month in rural area was the poverty line.

4. In 2009-10 the poverty in India was 38.2% and in 2011-12 it was 29.5%

Task Force on Poverty Estimation :

In 2015, Government of India appointed Dr. Arvind Pangariya as chairperson of the Task Force. This Task Force was aimed to –

(i) Suggest the method to estimate poverty, and

(ii) Suggest poverty removal programme according to the poverty.

Causes of Poverty:

Poverty is mainly associated with weak resource base and lack of employment. Small and marginal farmer, daily wage earners and casual workers are poor due to lack of land. Rural artisans have shortage of resources and lack of regular employment and this results into poverty. Following are the causes of poverty in India-

1. **Population Growth and Weakness of Development Strategy:**

India has 2.4% land and 17% population of world which shows the pressure of population on resources. Initailly we gave more importance to large and capital intensive industries instead of agriculture and labour intensive activities. The strategy resulted into less employment opportunities.

2. **Low Work Participation Rate:**

39.9% was the working population in 2011 in India. It was lower in India than in Japan. Germany and England. Thus dependence ratio is high in India. The dependence ratio in India in 2011 is 55.5% which is 28.2% in China and 38.6% in Russia.

3. **Unequal Distribution of Land:**

In 2010-11, total agricultural areas owned by marginal farmers was 22.2% while that owned by big farmer was 10.9%. It is clear that distribution of land in India is very uneven.

4. **Lack of Successful Land Reforms in the Country:**

India has suffered from the subdivision of

land holdings due to inheritance and thus size of working land holding is decreasing. 30% workers are daily wage earners. Ceiling law has been failed completely.

5. Low Increase in Agricultural Production and Side Effects of Green Revolution:

Agriculture productivity increased at low rate in India. Labour productivity is very low. The labour which would have shifted to industrial and service sectors could not have shifted and still working in agriculture sector. On the other hand, due to green revolution inequalities have increased between rich and poor farmers.

6. Job Less Growth:

After economic reforms in India, growth rate has increased but employment rate has not increased accordingly. The employment elasticity shows, decreasing trend in each sector.

7. High Increase in Food Grain Price:

In planning period, prices of agriculture products have increased 46 times. This price increase has affected the consumption levels of poor sections of the society. Public distribution system is not working properly in both rural and urban areas.

8. Social Backwardness and Lack of Mobility of Labour:

In rural areas there is social backwardness and lack of labour mobility which results into low labour productivity and thus lower income levels. Thus, alternative employment opportunities are less.

Policy and Effects for Poverty Eradication:

Poverty is a big challenge to the country. Poverty eradication was the main objection of 5th five year plan followed by implementation of many programmes directly to fight with the problem of poverty. Efforts were made to increase income of poor peole through wage employment programmes and self employment programmes. Balanced and inclusive development programmes and growth of infrastructure facilities were the steps taken for the purpose of poverty eradication.

The poverty eradication strategy of India can be described as below:

1. Economic Development and Poverty Alleviation :

In the beginning of planning it was imagined that economic growth will increase the income and this increased income will reach to poor through trickle down effect. Economic growth will increase employment which will eradicate poverty. But due to slow growth rate in India sufficient employment and income could not be increased and thus poverty could not be alleviated.

2. Implementation of Wage Employment and Self Employment Programmes for Poverty Alleviation

It was experienced in the decade of 1960 that economic growth could not alleviate the poverty and thus there is need of the direct attack on it. The studies of Dandekar and Rath, Minhas and Vardhan also suggested such steps to be undertaken. As result in the decade of 1970 Marginal Farmer and Agricultural Labourer Development Agency, Small Farmer Deelopment Agency, Food for Work Yojana and such other programmes were launched.

After this some big programmes were launched for poverty removal in India.

IRDP(1978), Employment Assurance Scheme (1993), PMRY (1993), Jawahar Gram Samridhi Yojana (1999) and Annapurna Yojana (1999) were started for different objectives. As a mix of many programmes, Swarna Jayanti Gram Swarozgar Yojana was launched in 1999. Antyodaya Yojana (2000), SGRY (2001),

Valmiki Ambedkar Aawas Yojana (2001), MGNAREGA (2009) and other such programmes were stared to alleviater poverty.

Above mentioned wage employment programmes mainly provided supplementary employment to casual labour. Under self employment programmes assistance and loans were given.

3. Social Assistance Programme :

On August 15, 1995 National Social Assistance Programme was launched to provide social security to poor persons. Old age pension, widow pension, disabled pension and family benefit are the four ways of assistance under this programme.

4. Area Development Programme and Infrastructure Development :

Problem of poverty is severe in some parts of country due to natural reasons. For there areas programmes have been launched to increase the income. Draught Prone Area Development Programe (1973), Desert Development Programme (1997), Hill Area Development Programme, and Command Area Development Programmes (1975) were launched.

Under area development programmes animal husbandry, water conservation & plantation works were done. Infrastructure of road construction, education and health, rural housing, etc. were developed.

5. New Strategy for Poverty Alleviation:

In 11th plan, it was accepted that only wage employment (MGNAREGA) programme can not alleviate the poverty in long run and thus there is need to create employment opportunities in organized and labour based manufacturing sectors so that labour can be mobilized from lower productivity agriculture sector to higher productivity non-agriculture sector. In 11th plan steps taken for poverty allevaiation are: (i) wage employment in rural sector, (ii) expansion of social security, and (iii) demand induced talent development.

Main Programmes for Poverty Alleviation-

Following programmes were launched in India for poverty alleviation:

1. Integrated Rural Development Programme (IRDP):

Under IRDP farmers were provided productive assets like irrigation sources, seed and fertilizers, animals for dairy, equipments for cottage industries, etc. so that the income of poor people can increase. This was programme was launched in 1978 and 1.82 crore families were benefitted in 7th plan. As a result, 40% people crossed up the poverty line. In this programme, beneficiaries were not properly selected. In 1999 IRDP was merged in Swarn Jayant Gram Swarozgar.

2. Jawahar Gram Samriddhi Yojana (JGSY):

This programme was implemented in 1999 as central sponsored yojana with the cost ratio of 75:25 between center and states. Durable productive community assets were constructed in rural areas under this plan.

3. Swarn Jayanti Gram Swarozgar Yojana (SJGSY):

SIGSY was a single programme of IRDP, 100 wells plan and many other plans of rural self employment. It was launched in April 1999 with objective to promote micro enterprises and to assist poor in self help group.

4. Employment Assurance Scheme :

This programme was implemented on October 2, 1993 in 1772 backward blocks situated in draught prone, desert, tribe and hilly areas and later it included 5448 blocks. Main objective of programmes was to create additional

wage employment for poor families below the poverty line. Cost divisions between center and states was 75:25.

5. Pradhanmantry Gramodaya Yojana (PMGY)

With the budget allocation of Rs. 5000 crore this yojana was implemented for rural area for the development of five important sectors of health, primary education, drinking water, housing and rural roads. In 2001-02, Rs. 2500 crore was the total expenditure in this programme.

6. Swarna Jayanti Shahari Rozgar Yojana (SJSRY):

In 1997 SJSRY was started by merging many programmes of poverty removal in urban areas. This programme had two parts: (i) Wage employment in urban area, and (ii) Self employment in urban area. With 75:25 ratio of cost of center and states, total expenditure in 1997-98, 1998-99 and 1999-2000 were of Rs. 102.51, 162.28 and 123.07 crore respectively .

7. Sampurn Gramin Rozgar Yojana (SGRY):

This programme was started in 2007 by merging Jawahar Gram Samridhi Yojana and Employment Assurance Yojana with the objective of creation of additional wage employment, food security and construction of durable community socio-economic assets. The cost distribution ratio was 87.5:12.5, between center and states.

8. National Food for Work Programme:

It was launched in 2004 in 150 most backward districts to create supplementary wage employment. This was completely centre sponsored plan in which food grains were given to states. In 2004-05, total expenditure was of Rs. 2020 core and total 20 lakh tones food grains were allocated.

9. Valmiki Amberkar Aawas Yojana (VAMBAY):

It was started in 2001 to provide houses to poor people living in urban slums. 50% was the subsidy. 1.6 lakh houses were constructed with the help of Rs. 211 crore in 2003.

10. Pradhanmantri Gram Sarak Yojana (PMGSY):

Amining at road construction in rural areas this progarmme was launched in 2000 as completely center sponsored plan. 60024 km rural roads were constructed with Rs. 7866 crore upto the end of 2004.

11. National Rural Employment Guarantee Scheme:

This scheme was implemented in 2006, after enacting an Act, initially in 200 districts. Under this programme the guarantee was given to provide 100 days per year insufficient wage employment to rural families. Sampurn gramin Rozgar Yojana and National Food for Work Programme were merged into it. In 200-09, this programme covered whole of the country and total 4.51 crore families were benefitted in 2008-09. In 2009, it was named as MGNREGA. Average wage was increased from Rs. 65 to Rs. 132 in 2013-14. This programme increased insufficient wage employment in rural areas.

12. National Rural Livelihood Mission:

This mission aimed to organized rural families and to assist them upto the complete removal from poverty. Under this programme one woman from each family is included in self help group on the basis of qualification. This mission was started in 2011 with the objective to make available the self employment and efficient wage employment opportunities by training and skill development. Sc, ST, women, disabled person and minority families are given preference. Cost distribution between centre and state in 75:25

ratio. In 2012, the scope of this programme was increased upto non-poor families. In 2013-14 Rs. 22121.2 crore were given as loan to self help groups.

13. National Urban Livlihood Mission (NULM) :

To make available the profitable employment to urban unemployed and under employed people, this mission was launched in 2013. This programme will organize urban poor into self help groups. Skill will be developed according to need of market. The main objective of this mission is to reduce urban poverty, to imporove living standard of urban poor people, to make available the profitable employment and urban housing. This programme ensures talent and enters preneourship development and availability of credit. Cost allocation ratio between centre and state is 75:25. In 2013-14, Rs. 720.43 crore were issued, 683450 persons were trained and 106250 people were assisted in self employment.

Remedy/Suggestions for Poverty Eradication:

Poverty can be eradicated by increasing employment opportunities and income levels. Following are some important suggestions in this regard:

1. Higher Economic Growth Rate:

Economic growth should increase employment in agriculture, small and cottage industries and handicrafts. This will increase income levels.

2. Efforts to Increase Social Justice:

Food security and public distribution system should be improved. Supply of public goods and services should be increased. Basic services should be increased in rural and backward areas. Assets distribution should be in the favour of poor persons. Education and health services should be improved in rural and urban areas.

3. Population Control and Family Planning:

Poor families consider children as social securities so social security should be expanded. Infant mortality rate, which is higher, should be controlled so that attraction of big-size family can be reduced. Birth rate should also be controlled to get the population growth decreased.

4. Expansion of Wage Employment, Self-employment and Social Assistance:

Wage employment creation should be more in rural and urban areas so that additional labour can be used productively. Oldage pension, widow pension and other such social assistance oriented programmes should be expanded.

Important Points:

- Problem of poverty is associated with the problem of lack of supply of basic needs. Poverty line is defined in terms of calorie consumption and consumption expenditure.

- According to Tandulkar estimates 26.93 crore people were poor in 2011-12 in which 21.65 crore people were poor in rural area and 5.28 in urban area. In some states (Chhattisgarh, Jharkhand, Bihar and Orissa) the poverty is more intensive.

- Rapid population growth, less work participation rate, unequal distribution of land, less development of small and cottage industries etc. are the constrains in the solution of the problem of poverty.

- For poverty alleviation rapid growth process was emphasized and for it many programmes were launched.

- The intensity of poverty can be reduced by expansion of education and health facilities for poor, control of population, increasing employment opportunities and increasing scope of social assistance.

Questions for Exercise

Objective Type Questions:

1. The minimum calorie measure to define poverty in rural area is-

   (a) 2100 calorie   (b) 2400 calorie

   (c) 2250 calorie   (d) 2500 calorie ( )

2. According to Tenndulkar estimates percentage of poverty in India in 2011-12 was

   (a) 25.7%   (b) 13.7%

   (b) 21.9%   (d) 37.2%   ( )

3. According to Tendulkar estimates in which state the poverty ratio was maximum in 2011-12 ?

   (a) Bihar   (b) Chhattisgarh

   (c) Jharkhand   (d) Kerala   ( )

4. Which is the definition of poverty on the basis of supply of minimum consumption need ?

   (a) Relative measure of poverty

   (b) Absolute measure of poverty

   (c) Both above   (d) Not both above ( )

5. Which standard is found in definition of poverty according to capacity measurement of poverty ?

   (a) Proportion of children aged below 5 years

   (b) Proportion of inefficient deliveries.

   (c) Proportion of female illiteracy

   (d) All of the above   ( )

6. According to World Bank the measure of poverty is:

   (a) Per capita per day 1 US dollar

   (b) Per capita per day 1.25 US dollar

   (c) Per capita per day 1.5 US dollar

   (d) None of the above   ( )

7. Which is not the wage employment programme to remove poverty ?

   (a) NREP   (b) JRY

   (c) TRYSEM   (d) Food for Work Yojana

Very Short Answer Questions-

1. What is calorie measure need to define poverty ?

2. What was poverty ratio in Inida in 2011-12 in rural and urban areas according to Tendulkar estimates ?

3. Name any two self employment programmes launched for poverty alleviations.

4. Write names of 5 states of India along with their poverty ratios in which poverty is maximum.

5. What are the main parts of social Security Assistance Programme ?

6. Define capacity measure of poverty.

7. What is definition of poverty given by Planning Commission in 2011-12 ?

8. What is trickle down effect ?

9. Write any three names of Indian economists who contributed in study of poverty in India.

10. Write complete name of N.R.E.P.

Short Answer Questions:

1. What are different standards to measure poverty ?

2. What are the shortcomings of calorie consumption method and poverty line method to measure poverty line ?

3. Define relative poverty.

4. Write three causes of high poverty in India.

5. How economic developed is helpful in poverty removal ?

6. Explain that poverty is a multi mantioanl concept.

7. Who are included in poor section in rural areas in India ?

8. What is National Rural Livelihood Mission ?

9. Write main objectives of National Urban Livelihood Mission.

Essay Type Questions:

1. Write measurement of poverty and its problems.

2. Explain the size and regional distribution of the problem of poverty in India.

3. Describe the causes of poverty in rural areas in India.

4. Describe the strategy adopted by government for poverty alleviation.

5. In your opinion, what can be done to remove poverty in India ? Explain.

Answer to Objective Type Questions :

(1) b (2) c (3) b (4) b (5) d (6) b (7) c

Reference Books:

1. Economic Survey : 2014-15,

2. Indian Economy: Mishra & Puri Himalaya Publication.

3. The Indian Economy, Ishwar Chand Dhingra, S.Chand & Sons, New Delhi.

4. Indian Economy : L.N. Nathuramka.

Chapter - 4.2

Unemployment

Labour is a factor of production. Size and efficiency of labour force play important role in a country and the level of development of a country determines the planning of the labour force. If a person has both ability and desire to work and the person does not get work, the person is said to be unemployed. Labour is employed in the form of self employment. According to classical economists, there is always full employment in the long run. If there is unemployment for some time, the wage rate decreases and situation of full employment is reached. According to Keynes, when aggregate demmet is short, it results into low level of production in comparison to capacity and thus unemployment occurs. In developing countries unemployment can occur due to improper technique and shortage of factors of production other than labour. Labourer does not get employment for some months in a year due to seasonal nature and dependence of agriculture on monsoon. In developing and agriculture based economies there is disguised unemployment. In these economies more labour is employed in the family based agriculture which seems to be employed but it adds nothing to production. There are changes always in the organic structure of the economic system. Some new industries are started and some old are closed. Thus there is some unemployment even in the situation of full employment. Condition of unemployment is sadness oriented and it wastes the resources of country. So it is necessary to study the nature, causes and remedies of unemployment.

Meaning of Unemployment:

Unemployment is that situation in which people do not get work (employment) at the prevailing wage even though they have ability and desire to work. Thus a person who is unable (child, old, etc.) to work and does not have desire to work is not considered under unemployment. If people get employment for some time and below the capacity then it is the situation of under employment which also considered under unemployment.

Kinds of Unemployment:

On the basis of nature and causes unemployment is of the types as described below:

1. Structural Unemployment:

It is long run unemployment and caused by backward economic structure of economy. It is associated with the growth process of the country. When rate of capital formation is slower than labour this unemployment takes place. This unemployment is caused by the structural disequilibrium in the economy. For the solution of structural unemployment supply of capital goods, entrepreneur, management and other factors should be increased.

2.   Disguised Unemployment:

This is the situation in which unemployment can not be seen clearly. In developing countries people work in family based agriculture in which people are put into work more than requirement. They are seemed to be employed but they do not add anything to production. For example, if a farmer owns 2 hectare land on which two people can do work but all the 6 numbers of his family are put into the work. If these extra 4 people are removed from the work, there would be no impact on the total production. They can be used in other work in which production can be increased. Thus these 4 people come in to the disguised unemployment. Disguised unemployment is a source of probable saving in developing countries. This unemployment is seen in cities also in cases of self employment and results into less productivity and low income. There are 4 shops in a locality where only one shop is sufficient. Clearly, removal of disguised unemployment does not reduce the level of production.

3.   Seasonal Unemployment:

People do not get work in agriculture for whole of year because of its dependence on monsoon and reasonal nature. This unemployment is seen in festival seasons also. This unemployment can be controlled in rural areas with the help of development of non-agricultural activities. Seasonal unemployment is also the situation of underemployment.

4.   Open Unemployment:

Under this unemployment people, who want work and have ability and capacity to work, do not get work and thus people are fully unemployed. People who do not get work in rural areas and come to urban areas for employment are considered under open unemployment.

5.   Cyclical Unemployment:

This unemployment is created by trade cycles particularity in capitalistic or market system based economies. During depression aggregate demand decreases which results into low production and unemployment. Due to the efforts of depression control employment is increased again. This type of unemployment is seen in developed countries. According to Keynes, this unemployment can be controlled by increasing aggregate demand in the economy. Thus, lack of aggregate demand is the cause of unemployment in developed countries while it is there in developing countries due to deficiencies on the supply side where productive capacity and development level are lower.

6.   Frictional Unemployment:

Some unemployment can also be seen under the situation of full employment. Organic structure of economy always changes. Some industries close down and some industries start-up. When industries are closed labour becomes unemployed for some time up to which new work is reached. This type of unemployment is the frictional unemployment. This unemployment is seen always and in every type of economic system.

Measurement of Unemployment:

When a person gets work for 273 days in a year according to 8 hours daily, it is known as standard person year. There are three concepts to measure unemployment according to national sample survey. These are:

1.   Usual Status Unemployment:

This is the number of people who are not under any employment in previous one year before the survey. It shows the long term or open unemployment in which it is seen whether people are generally in employment or unemployment or out of the labour force.

2.   Weekly Status Unemployment:

Under this the employment of people in previous one week of the survey is found out. If

people do not get employment for even one hour on any day in these seven days then they are supposed to be unemployed for that week.

3. Daily Status Unemployment:

Under this status employment per day of the previous week is seen. If a person gets employment for one to four hours in any day that person is supposed to be employed for half day and if a person gets employment more than 4 hours, the person is supposed to be employed for one day. Daily status unemployment is the ratio of per week labour days of unemployment to per week total labour days. It is measured in time rate of unemployment. This concept of measurement of unemployment is very wide and includes all types of unemployment.

Size of Unemployment in India:

Data on unemployment in India are available in four sources. These are:

1. Census report of India.

2. National Sample Survey Organisation report on status of employment and unemployment.

3. Registered data in employment offices of employment and training directorate.

4. Annual survey of labour bureau on family employment and unemployment.

Due to differences in objectives and methodology there is difference in data of all the sources. In cities there is mainly industrial and educated unemployment while in rural areas there is open, disguised and seasonal unemployment. At present the latest data on unemployment in India are available for 2011-12 provided by N.S.S.S.O. in its 68th round. These data are shown in Table – 1.

Table-1
Employment and Unemployment Status in India

Status	1999-2000	2004-05	2011-12
Total Labour Force (million)			
(a) U.S.	407.00	469.0	483.7
(b) C.D.S.	363.3	417.2	440.2
Employed Person and Man Days (million)			
(a) U.S.	398	457.9	472.9
(b) C.D.S.	336.9	382.8	415.7
Unemployment Rate (%)			
(a) U.S.	2.2	2.3	2.2
(b) C.D.S.	7.3	8.2	5.6

Source : Various surveys of N.S.S.O.

Notes : U.S. (Usual status) measures individual employment while C.D.S. (current daily status) measures man days.

(a) Table-1 shows that total labour force in India was 407 million in 1993-2000 which increased upto 483.7 million in 2011-12 according to usual status. According to C.D.S. total work force was 363.8 million in 1999-2000 became 440.2 million in 2011-12. Clearly, according to both status the labour force shows increasing trends in the period of 1999-2000 to 2011-12.

According to usual status 398 million persons and man days were employed in 1999-2000 which increased upto 472.9 million in 2011-12. C.D.S. related estimates show that total employed person and man days were 336.9 million in 1999-2000 which increased upto 415.7 million in 2011-12.

As for as rate of unemployed is concerned it was 2.2% in 1999-2000 at U.S. and again 2.2% in 2011-12. As per C.D.S. this rate was 7.3% in 1999-2000 and decreased to 5.6% in 2011-12. Thus, in brief following conclusion can be derived from Table-1:

(i) Total labour force continuously increased in the period 1999-2000 to 2011-12.

(ii) Number of employed persons and man days have shown increasing trends in case of both U.S. and C.D.S. in the period 1999-2000 to 2011-12.

(b) Structural changes in employment in India may be seen from the following description

Table-2

Employment Distribution according to Economic Activities

(in %)

Area	2004-05	2011-12
Primary Sector	58.4	48.9
Secondary Sector	18.2	24.3
Service Sector	23.4	26.8

Sources : N.S.S.O. Report – 2011-12, 68th Round.

Share of primary sector in employment was 58.4% in 2004-05 which decreased to 48.9% in 2011-12 while share of secondary sector increased in 2011-12 upto 24.3% which was 18.2% in 2004-05. It is also clear that the share of service sector was 23.4% in 2004-05 which became 26.8% in 2011-12. It is clear that share of primary sector is still high. The second place in employment share is of the service sector where its contribution in state domestic product is 61%.

(c) Share of self employment in total employment is 52.2% in which a big portion of daily wage earners is associated with low income earning activities. According to structure of employment, employment is classified as,

(i) Self employment,

(ii) Regular salary employment

(iii) Casual employment.

In India working conditions of regular salary employment are better, security is more and salary is higher. For casual labour there is lower salary, lack of facilities and working conditions are not good. Presently, 52% labour is in self employment, 18% is in regular salary employment and 30% is in casual employment. In 1977-78, 58.9% labour was engaged in self employment, 13.9% labour was in regular salary employment and 27.2% was in casual employment. Trends show that share of both regular salary employment and casual employment has increased but that of self employment has decreased.

Employment in organized and unorganized sectors should also be looked in. Orgainsed sector includes that labour which gets, employment of 10 or more persons in public and private sectors. Wage is higher in organized sector than in unorganized sector. In 2009-10, 64% of total employment in organized sector was in public sector while it was only 36% in private sector. In 2011-12, 82.7% of total labour was in unorgainsed sector and 17.3% was in orgainsed sector.

(d) In India, long term casual unemployment is 2% while C.D.S. unemployment was 7.3% in 1999-2000, and 5.6% in 2011-12. In period 2004-05 to 2011-12 employment increased less and 'however' unemployment decreased. The main cause behind this can be the increasing levels of enrollment in higher education.

(e) In 2011-12, 55% rural men, 25% rural women, 56% urban men and 16% urban women were in the labour force. 39% were the daily wage earners. Daily wage earners were 40% in rural sector and 36% in urban sector. 54% rural men and 25% rural women were the daily wage earners. Similarly, 55% urban men and 15% urban women were daily wage earners.

In urban area in male daily wage earners, 26% were registered in commerce and hotels, 22% in manufacturing sector, and 21% were registered in service sector. In urban area, in female daily wage earners 40% were registered in other service sector, 29% in manufacturing sector and 13% were registered in commerce and hotel sector. Thus, in urban area the main activity for male was commerce and hotel while for mate if was 66 other service sector'.

For the 15-59 age group workers daily wage in rural sector was Rs. 299 and in urban sector was Rs. 450 while in this same age group the daily wage of casual workers in rural area was Rs. 127 for male and Rs. 111 for female. Thus regular wage was higher than casual wage. Wage in urban area was higher than in rural area and wage for male was higher than wage for female.

Educated Unemployment :

Education helps in human development. Education and training increase efficiency of labour. But in our country educated unemployment is widely observed and thus there are no returns on the investment on education and educated labour is being wasted due to unemployment. Person who has passed secondary and higher education and the person who has completed diploma and certificate course is the educated one. Unemployment rates for educated adults (15-29 years age group) in rural male, rural female, urban male and urban female are 8%, 16%, 12% and 20% respectively.

The educated unemployment rate in rural and urban areas is higher for those people who have passed secondary and above level examinations in comparison to people who have passed the less than secondary level examinations. Educated females are having more unemployment rate both in rural and urban areas in comparison to educated males. In the period 1999-2000 to 2011-12, educated unemployment has decreased and this fall has been found more in case of females than males. In rural males educated unemployment in 1999-2000 was 5.6% which has decreased to 3.6% in 2011-12. In rural educated females unemployment rate in 1999-2000 was 14.6% which has been declined to 9.7% in 2011-12. Educated unemployment is caused by slow economic growth, defective education system, lack of technical training and disequilibrium in the demand and supply of educated people. Unemployment rate is found higher in people who have obtained higher education. So there is need to change the education system according to the requirement of economic development so that educated persons could not face the problem of unemployment.

Causes of Unemployment :

Following are the main causes of unemployment:

1. ## Employment growth not Coping with Development pattern and Underdevelopment:

Under structural change labour force is got transferred from agricultural to non-agricultural activities. Non-agricultural sector has not created much employment opportunities in India to use the labour which comes from agriculture. There is disguised unemployment in agriculture. If employment opportunities would have been developed in non-agricultural sector, the extra labour in agriculture would have been used. Our small and cottage industries are also underdeveloped and do not have much employment opportunities.

After independence, the planned development strategy aimed to developed the large industries with capital intensive technique. This was not proper effort in a labour abundant country like India. After independence the gap between growth rate and rate of employment creation increased. After 1980, growth rate

increased rapidly but this growth rate could not generated employment and thus it was the employmentless growth.

Rate of employment growth also decreased due to fall in employment elasticity. In period 1983-1988, the employment rate was 0.68% which became 0.16% in 1993-94 to 1999-2000. In agriculture this rate became 0.01% from 0.87% in this same period of time. The percentage change in employment is divided by percentage change in output which gives the value of employment elasticity.

2. Increase in Population and Labour Supply:

After independence birth rate was high and death rate became low and this resulted into the rapid increase in population in India, In 1951, population of India was 36 crore which increased to 121 crore in 2011. Our growth rate was not sufficient to provide employment to the increasing labour face. About 80 lakh people are added to labour force each year.

3. Incorrect Planning:

At the beginning of the planning it was thought that employment will automatically be created in the economy with economic development and thus unemployment was kept associated with the growth. Industrial unemployment is due to migration towards cities, lack of industrial development and slow growth rate of industries while educated unemployment is due to defective system of education. Our education is not employment oriented. Our planning system could not create sufficient employment opportunities both in rural and urban sectors and thus it could not promote labour intensive technique in the production. Interest rates were kept lower to promote the capital intensive technique. Our planning system also failed in creating job opportunities in small and cottage industries also.

4. Defective Education System :

Education system should be prepared according to the requirements of the economic development. According to Gunnar Myrdal, the objective of Indian education system was not to develop the human resources. Here the education system can produce clerks and low level administration offices for government and commercial enterprises. Expansion of such type of educational institutions resulted into increase the unemployment. Modern education system does not develop human resources and can not provide employment to unemployed people.

Government Policy for Unemployment Reduction:

When planning was started it was thought that sufficient employment opportunities will be created and increasing labour force will get employment. But in fifth five year plan it was noticed that dependence on growth rate only for increase in employment is not sufficient and there is need to launch some addition programs for it in public and private organized sectors. Thus, objective of 6th five year plan was taken to reduce the problem of unemployment and thus efforts were made to increase self employment in agriculture and small or cottage industries. In 7th plan under the development planning strategy high preference was given to generate employment by producers. In 8th plan, 2.6% to 2.8% increase in employment per year was the objective so that in coming ten years the problem of unemployment could be solved completely. Diversification in agriculture development of unused land, expansion of non-agriculture activities in rural areas, rapid development of unroganised and service sector and development of small and decentralised industries etc. steps were emphasized. In 9th plans more emphasis was given to labour intensive sectors and those sectors in which more employment was there. It was noticed that government interference was

necessary for creation of employment opportunities. In 9th plan, sectors of agriculture and related activities, small and medium enterprises, education and health, manufacturing, communication technology, etc. were emphasized to create more employment opportunities. In 11th plan, the objective was to give employment to 5.58 lakh people in sectors of manufacturing, tourism, handicraft, stone business, leather products, food industries, etc. Under 12th plan the objective was to give employment to 10 crore people in the manufacturing sector. These programs of employment creation were of three types:

(i) **Wage Employment Program**:

Main objective of this program was to create wage employment for the inefficient labour in rural areas. Rural Landless Employment Guarantee Program, Aggregate Rural Employment Guarantee Plan (2005) were such programs. These programs were launched by government to tackle the underemployment in rural areas.

(ii) The objective of these programs was to give training for self employment and to make available the productive asset so that people could do their own business. Integrated Rural Development Program (IRDP), TRYSEM and Self Employment Program for Urban Poor, etc were the programs in this category.

(iii) **Area Development Program:**

Some area development programs were started for the development of less developed areas to create employment and to solve draught related and other problems. Water Shed Development Program, Desert Development Program, Draught Prone Area Development Program, etc. were such programmes.

Majour Employment Programmes:

Some of the major employment programmes were as follows:

1. **National Rural Employment Programme (NREP):**

This was mainly wage employment programme in which productive social assets were constructed in rural areas. NREP was started in 1980 to create employment opportunities in rural areas. Under this programme funds were given to states by the central government on the basis of marginal farmers, number of agriculture labourers and effect of poverty. In 1989-90, this programme was merged into Jawahar Rojgar Yojana.

2. **Training for Rural Youth for Self Employment Programme (TRYSEM):**

This programme was started in 1979 to train rural youths for self employment. Under this programme 2 lakh people were to train each year. It was mandatory to have 1/3 rural women in training. 8.8 lakh rural people were trained in the 7th plan. 23.3 lakh people were trained in the period 1991 to 1999. In 1999 this programme was merged into Swarn Jayanti Gram Swarozgar Yojana.

3. **Rural Landless Employment Guarantee Programme (RLEGP):**

Started in 1983 this programme aimed to give employment of 100 days per year to at least one member per family to the agricultural labour (labourers who earn income by doing work on the land of others). Under this programme following construction works were carried out:

(a) Small irrigation, school building, water conservation, and small dam construction.

(b) Programme of social forestry and farm foresting.

(c) Construction of houses in Indira Aawas Yojana.

(d) Construction of toilets in rural areas.

In 1989, this programme was merged in JRY.

4. Employment Assurance Scheme (EAS):

This programme was started in 1993 in 772 backward development blocks. It was mainly a wage employment programme started particularly in trible, hill, desert and draught prone areas. In 2001, this programme was merged into Gram Samariddhi Yojana and later in Integrated Rural Employment Yojana.

5. Jawahar Rozgar Yojana (JRY):

Ths programme was started in 1989-90 as wage employment programme. Under this programme both NREP and RLEGP were merged. To be implemented through panchayats, 30% was the reservation for women. Under this programme resources were to be given to states on the basis of poverty ratio, SC and ST population ratio, ratio of agricultural labourers and level of agricultural production. In 1999, it was named as Jawahar Gram Samriddhi Yojana.

6. Nehru Rozgar Yojana (NRY)

It was the employment oriented programme for urban areas for the following objectives.

(a) Wage employment in urban areas.

(b) Establishment of small enterprises in urban areas.

(c) Improvement of housing in urban areas.

7. Integrated Rural Development Programme (IRDP):

It was the programme for poverty removal and started in 1978-79. It was self employment based programme. Under it productive assets were made available so as to come out from poverty by earning income. Animal husbandry, weaving, handicraft, etc. activities were included.

8. Swarn Jayanti Gram Swarozgar Yojana:

In 1999 this programme was launched jointly with self employment oriented rural programmes. It was the programme of rural self employment. Productive assets were provided through loan and assistance for self employment and run by self help groups. Upto 2011, Rs.42168 crore were given to 1685 people as assistance. Later on this programme was marged in National Rural Livelihood Mission. The share of expenditure of center and state was 75:25.

9. Swarn Jayani Shahari Swarozgar Yojana:

This programme was started in 1997 with five parts of it, as shown below:

(a) Urban self employment

(b) Training to promote urban employment

(c) Urban wage employment

(d) Urban woman self employment

(e) Urban communicative development network

Upto 2014, 6.8 Lakh people were benefitted. In 2013, Rs. 720.5 was the total expenditure in this programme. In this programme the share of centre and state was 75:25.

10. National Rural Employment Guarantee Act:

This programme was started in February, 2006 in 200 most backward districts of India and extended to all districts of the country in 2008. On October 2, 2009, this programme was named as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Under this programme guarantee of 100 days inefficient wage employment in nearby areas was given to each rural family. 1/3 reservation is given to women. There is provision of unemployment allowance when wage employment is not available. This programme was implemented by

Panchayati Raj institutions and works of water conservation, forestry, plantation, flood control, road construction, etc. were taken into hand. In 2012-13, total expenditure in this programme was 39661 crore.

Under this programme employment of 230 crore man days was created in 2012-13 and thus wage rate and demand for labour increased in rural areas. Wage was paid through post office accounts which promoted financial inclusion. It strengthened the natural resource base of the country.

This programme faced some limitations. Due to late payment of wages, unemployment allowance was not paid. In the implementation of the programme norms were not fulfilled strictly.

Government has orgainsed many committees to give suggestions to increase employment. These suggestions are:

(a) National Development Council Committee, 1992 gave recommendations to develop rural infrastructure, to develop the small and medium cities in the integrated way and to generate wage employment in small cities.

(b) The working committee on employment opportunities emphasized on increasing the growth rate, launching employment programmes for weaker sections of society and increasing education and efficiency.

(c) Special group on employment creation in 10th plan emphasized on launching special programmes for the availability of employment to 1 crore people per year.

Suggestions to Control Unemployment:

Following suggestions can be given to control unemployment:

1. Increase in Investment and Structural Changes in Investment:

Higher levels of investment and capital formation increase the employment opportunities in economy. There should be more investment in labour intensive projects so that there can be more production and more creation of employment opportunities. Labour intensive technique should be used in agriculture along with expansion of animal husbandry, food processing industries, fisheries and intensive agriculture.

2. Establishment and Expansion of Small and Village Industries:

Small and cottage industries should be started in rural areas because these industries require less capital and have lower employment elasticity. This step increases employment opportunities in rural areas and thus problem of under employment and seasonal unemployment can be solved. Expansion of facilities of drinking water, housing, education, health, roads, etc. can also increase employment opportunities in rural areas.

3. Man Power Planning:

There should be proper planning regarding the available labour force and the required labour force in the country. On one side, labour force is unemployed and on the other side, efficient labour force is not available. Thus, there is need to train the labour force as per the need of the economy. This is the way by which employment can be increased.

4. Change in Education System:

Education system should be developed according to the local employment requirement. In case of higher education, proper training system should be developed. Education and training should be according to the requirement of employer, producer and economic activities. It should be studied time to time that what type of labour is required by different sectors of the economy. Thus, there should be changes in the education system according to the long term need of economy.

5. Population Control :

Population control is required to plan the labor force of country as per the need of it. Expansion of economic activities should be followed according to the increase in labour force. Birth rate should be controlled to keep population at the desired level in the country.

6. Special Employment Programme:

In India, disguised unemployment is more than open unemployment. In case of underemployment work opportunities should be created by wage employment programmes, like MGNREGA. For the long term solution of employment, wage employment programmes are more important both in rural and urban areas.

Urban unemployment is mainly due to the migration of rural labour force towards cities and this is mainly the educated unemployment. For its solution special employment programmes should be started in rural areas. There is need to change the structure of investment so that it can absorb more labour force. The nature of short run special employment programmes and long run special employment programmes should be different.

Important Points :

- Labour is important factor of production. When people, who want to do work and have ability to work but do not get work, they become unemployed.

- There are different causes of unemployment in developed and developing countries. Cyclical unemployment is found in developed countries while disguised unemployment is seen in developing countries. In developing countries seasonal unemployment and structural unemployment are also found.

- There are three criteria to measure unemployment in India. These are:

  (i) Usual status unemployment

  (ii) Weekly status unemployment

  (iii) Daily status unemployment

  Daily status unemployment is the wide criterion.

- In rural sector seasonal and disguised unemployment is found while industrial and educated unemployment is found in urban areas.

- Share of primary sector in employment is decreasing while shares of secondary and service sector are increasing .

- According to daily status unemployment in India in 2011-12 was 5.6%, number of daily wage earners is 39%, and 52% is the self employment in total employment in India.

- Underdevelopment, rapid increase in labour supply, defective education and planning systems, etc. are the main causes of unemployment.

- For removal of unemployment self-employment, training, area development, wage employment creation and many other programmes have been launched.

- Change in investment structure, expansion of small and rural industries, manpower planning, change in education system, population control are the suggestions to control the unemployment.

Questions for Exercise

Objective Type Questions:

1. Data on unemployment in India are collected by:-

   (a) Reserve Bank of India

   (b) State Bank of India

   (c) NABARD

   (d) N.S.S.O.   (   )

(212)

2. The widest criterion to measure unemployment is:-

   (a) Usual status unemployment

   (b) Weekly status unemployment

   (c) Daily status unemployment

   (d) Open unemployment   (   )

3. Standard employment year includes-

   (a) Daily 6 hours and 275 days in the year

   (b) Daily 8 hours and 273 days in the year

   (c) Daily 8 hours and 275 days in the year

   (d) Daily 8 hours and 280 days in the year

4. In total employment in India in 2011-12, the maximum share was of-

   (a) Wage employment

   (b) Self employment

   (c) Salary employment

   (d) None of above   (   )

5. Agricultural has labour more than necessacity and thus labour productivity is lower. If this excess labour is removed from agriculture the production will not decrease. This is the type of unemployment.

   (a) Structural unemployment

   (b) Disguised unemployment

   (c) Cyclical unemployment

   (d) Seasonal unemployment

6. Due to trade cycle output decreases and thus employment decreases. This is the type of unemployment:

   (a) Seasonal unemployment

   (b) Cyclical unemployment

   (c) Disguised unemployment

   (d) Structural unemployment   (   )

7. In 2011-12, according to usual status, unemployment rate of educated youth (15-29 years of age and education above secondary level) was maximum for-

   (a) Rural men

   (b) Rural women

   (c) Urban men

   (d) Urban women   (   )

8. Which measure should be used to control the problem of unemployment ?

   (a) Increase in investment and change in investment structure

   (b) Establishment and expansion of small and rural industries

   (c) Manpower planning

   (d) All of the above   (   )

Very Short Answer Questions:

1. What is standard person year ?

2. What is meaning of usual status unemployment ?

3. What is weekly status unemployment ?

4. What is current status unemployment?

5. Name any two programmes launched in India for the removal of unemployment.

6. Name any two wage employment programmes used to remove unemployment in India.

7. Mention any two reasons responsible for the problem of unemployment in India.

8. Write any two types of unemployment found in rural sector.

Short Answer Questions:

1. What is meaning of unemployment?

2. What do you mean by disguised unemployment?

3. Write meaning of seasonal unemployment.

4. Write three status of unemployment measurement in India.

5. What is the size of educated unemployment in India?

6. Write areas of main employment activities in urban areas in India.

7. Write structural changes in employment in different sectors of economy.

8. What type of changes are required in education system to remove the educated unemployment ?

Essay Type Questions:

1. Write different types of unemployment and show that how the problem of unemployment is different in developed countries from that in developing countries ?

2. Write a notes on the status of employment and unemployment in India.

3. Discuss the main causes of unemployment in India.

4. Describe the policies adopted by government for removal of unemployment in India.

5. Write suggestions for the solution of the problem of unemployment in India.

Answer to objective Type Questions-

(1) d (2) c (3) b (4) b (5) b (6) b (7) d (8) d

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Chapter - 4.3

Environment Pollution

Inputs for production and necessary conditions for life are provided by environment. Effects of economic activities on environment in last four decades have worried us. It is argued that future development will inversely be affected by environment. Environment means all those organic and inorganic agents which are related with each other and provide necessary conditions for our life. Organic agents include human being, animals, birds, trees, plants, small living organs, etc. and inorganic agents include water, air, soil, light, etc. Environmental study is the study of relation between these organic and inorganic agents.

Environment performs 4 major function for live. These are:

(i) To arrange necessary bilogical, physical and chemical systems for life like air, rivers, fertile soil, living creatures and plants.

(ii) Environment provides inputs for production and economic activities.

(iii) Environment controls itself the wastage created by human activities and production activities.

(iv) To provide other services like natural beauty.

Type of Pollution:

Different types of pollution are as discussed below:

1. Air Pollution:

Any adverse change in physical, chemical and biological qualities of air which affects the human life and other living creatures is known as air pollution. Gases released by thermal power projects, industrial units and automatic vehicles concentrate in specific area. In these gases carbon dioxide, carbon monoxide, sulphur dioxide, other gases are present which pollute air which causes problems related will sleeplessness, stress, headache, heart diseases, eye diseases, etc. Life of plants and animals is also affected by air pollution. The main air pollutant is the carbon dioxcide.

Due to concentration of gases average temperature is increasing which is known as green house effect. It results into melting the ice which increases the water level in seas. The rain cycle becomes irregular and crop productivity decreases.

In Kyoto conference (1997) in Japjan a treaty was concluded (known as Kyoto protocol) and it was decided that the emission of gases (who are responsible for increase in global temperature) has to be decreased by 5% upto 2010. 169 countries have accepted these provisions upto now.

Air pollution can be controlled by decreasing dependence on thermal energy projects, by using clean fuel, by using

environment friendly techniques in industrial projects, by increasing public distribution system, etc.

The gas released by airconditioner, refrigerator, etc. is known as chloroflurocarbon which destroys the ozone layer and thus ultra violet rays reach the earth. To control the depletion of ozone layer an agreement (Muntreal agreement) was signed in Septemeber 1987 with the efforts of U.N.O. Objective of this agreement was to close down the production of chlorofluorocarbon gas upto 2010 in whole of the world. 191 countries signed this agreement. Countries made efforts and the level of ozone layer decreased 5% in the period 1979 to 1990.

Increase in air pollution results in acid rain. The acid rain is harmful for plants and water. Acid rain reduces the fertility of land. So there is need to control the gases which are responsible for acid rain.

2. Water Pollution :

Quality of clean water is reduced by environmental activities which results into decreasing the clean water supply. This is known as water pollution. It adversely affect the animal world and the vegetation. Following are the causes of water pollution:

(i) Mixing of industrial wastage into clean water.

(ii) Dropping of home wastage in the source of clean water.

(iii) Mixing of agriculture chemicals in clean water.

(iv) Lack of proper solid waste management

(v) Mixing of radio active elements in water.

3. Soil Pollution:

The upper thin layer of soil is very valuable for life. The adverse change in physical, chemical and biological qualities of soil is known as soil pollution which destroys the thin layer of soil.

Thus productivity of soil is reduced. Following are the causes of soil pollution:

(i) Deforestation or cutting of trees.

(ii) Excess grazing of animals.

(iii) Use of agriculture chemicals (fertilizers and pesticides)

(iv) Rapid flow of water

(v) Improper way of solid waste management.

(vi) Excess exploitation of underground water.

(vii) Lack of proper methods for land conservation.

(viii) Improper irrigation.

Soil pollution can be controlled by these methods- (i) Plantation (ii) Control on excess grazing (iii) use of organic manure and pesticides (iv) use of proper water flow system (v) proper utilization of water, (vi)Using proper crop cycle, and (vii) proper management of solid wastage.

4. Lose of Biodiversity:

Biodiversity is an important resource of the world. Existence of plants, trees, animals and micro creatures is the biodiversity. It is important due to these causes-

(i) Importance in ecological system.

(ii) Importance for increasing agricultural production.

(iii) Availability of medicines because 80% material used in medicines is available from plants, animals, etc.

(iv) Importance for natural beauty.

Biodiversity is suffering from loss due to below given reasons:

(i) Loss of habitat of living creatures due to human activities.

(ii) Loss due to excessive exploitation of natural resources.

(iii) Continuous loss due to climate change.

Because biodiversity is important resource so its loss can be controlled by:

(i)   Protecting habitat

(ii)   Controlling excessive exploitation of natural resources

(iii)   Controlling improper changes in climate.

5.   Solid Waste Management:

Reusable material kept at improper place and in improper way which creates problems in the working system of environment is the solid waste. This solid waste is created by human, industrial and agriculture activities.

As result of communication revolution electronic waste is increasing like old computers, old mobiles and electronic goods. Developed countries are sending this solid waste to developing countries Nuclear waste is also a problem because it is not managed by proper method. These wastes are dropped in sea which pollutes sea resources. Open places, rivers, etc. are also being polluted due to the solid wastes. Wastes of houses, agriculture activities, etc. are very harmful for environment. In developing countries solid waste management has become a very big problem due to increasing population, expanding urbanization and increasing economic activities. All types of solid waste should properly be collected, stored, discharged and reconstructed.

Solid wastes are created by two sources:

(i)   Municipality waste: It includes the garbage created in houses, offices, markets and from small and cottage industries in the municipality area.

(ii)   Non-munisipality Waste: it includes the waste created by agriculture, industry, mixing and other economic activities.

To manage the solid waste following types of steps should be undertaken:

(i)   Proper system to collect garbage in residential areas.

(ii)   Plastic, metal waste, electronic waste, and nuclear waste should be treated as per their nature.

(iii)   Solid waste of hospitals should be treated and managed separately.

(iv)   Throwing and burning garbage in open area should be prohibited.

(v)   Food waste should be used to feed animals and in biogas production.

(vi)   Closed vehicles should be used in transportation of solid waste, and

(vii)   Joint efforts of general public, local selfgovernment units and non-government organisatins are needed for this work.

6.   Noise Pollution:

Abnormal and unbearable high noise is the noise pollution. Abnormal and high voice is known as noise. According to world Health Organisation, noise during day and night should be of 55 decibel and 45 decibel respectively. Generally, noise of more than 60 decibel is considered to be harmful.

High noise created by human made sources is the main source of noise pollution. Noise created by machines in industrial sectors, noise created by transport means and noise of entertainment sources are the examples of noise pollution.

Noise pollution decreases the hearing capacity. Noise of more than 90 decibel is dangerous to hearing capacity. According to one estimate 10% people in urban areas and 7% people in rural areas are suffering from this problem. Due to excessive noise pollution human behavior and mental condition of people are adversely affected.

Noise pollution is harmful for Health-

Modernisation has increased the problem of noise pollution. Sufficient law, technical way of life and change in human behavior are required to control the noise pollution. Establishment of industrial units outside the residential area, maintenance of machines, using less noise making machines, determination of noise level in urban areas, effective control on noise making old vehicles, etc. are the various steps which can be helpful in controlling noise pollution.

Causes of Environment Pollution:

Following are the causes of environment pollution:

1. Rapidly increasing industries and not using the proper pollution control system by industries.

2. Deforestation, lack of forests and excess grazing of animals.

3. Increase in carbon due to increasing number of vehicles.

4. Increasing use of chemical fertilizers and pesticides in agriculture, improper method of irrigation and lack of proper agriculture waste management.

5. Pressure of population on natural resources due to increasing population. 17% population of the world is living on 2.17% land area of the world.

6. Poverty-dependence on traditional sources of energy.

7. Lack of proper method of solid waste management.

8. Dependence on thermal power resources for energy.

9. Excess exploitation of non-renewable natural resources.

10. Lack of thinking on environmental issues concerned with loss of biodiversity.

11. Lack of commitment of developed countries in carbon emission control.

Suggestions to Control Environment Pollution:

Following suggestions can be given to control environment pollution:

1. Pollution should be controlled by using proper pollution control system in industries, by using efficient fuel method and by using solid waste management system.

2. Forest area should be increased by plantation. Grazing animals should be controlled. Social forestry should be developed and by using alternatives of wood uses.

3. Public transport system should be developed.

4. Organic manure should be used in place of chemicals and pesticides in agriculture and water efficient use system in irrigation should be developed.

5. Population growth should be controlled to reduce burden on natural resources.

6. Issues concerned with pollution should be kept in mind while implementing poverty removal programme. Dung gas should be used as fuel in place of dry dung.

7. There is need of proper decantation of urban, industrial and nuclear wastage.

8. Dependence should be increased on wind energy, solar energy and tidal energy. Efficient energy systems should be expanded.

9. Substitutes of non-renewable natural resources should be searched.

10. Biodiversity available on earth should be protected.

11. There should be commitment of developed countries for the control of carbon emission.

These countries should transfer the efficient technology to developing countries.

Earth Summit:

An environment conference was orgainsed in 1992 by U.N.O. in Reo de Jenero city of Brazil. The aim of this conference was to decide the outline of future environmental programmes. This conference is known as the earth conference.

Following documents had been submitted in this conference:

(i)   Document regarding guideline principles of environment policy having 27 points declaration was submitted.

(ii) Document agenda 21 was submitted to keep the world green in 21st century. In this agenda issues of poverty, population policy, health, education, women, youth and underdeveloped human communities were emphasized. There is description of safety of pure water resources, safety of oceans, protective use of poisonous chemicals, etc. in this agenda.

(iii) In this document there were provisions about reduction of the emission of responsible gases for the increasing temperature of environment.

(iv) It was proposed for biological resources that if developed countries use the biological resources of developing countries, the developed countries should share the biological technique and benefits with developing countries. U.S.A. opposed this proposal.

(v)   This document was concerned with conservation of forests but due to objection of developing countries, this document was not approved.

Central Pollution Control Board:

This board was established in India in 1974 with 7 regional offices and 5 laboratories. This board manages the estimation and investigation for environment. This board is responsible to maintain the national environmental standards under the different environmental rules. This board collects and distributes informations related with land, water and air. This board coordinates with all the state level pollution control boards also. It gives advice to central government on controlling water and air pollution. Central pollution control board, along with State Pollution Control Boards, take steps to implement the laws of controlling the environmental pollution.

Concept of Sustainable Development:

Studies conducted about relationship between environment and economy indicate that present mode of development is affecting environment seriously and if it is continued in the same way the environment will not be able to complete our economic activities in future. In this subject the issue to be worried about is to see whether necessary ecological conditions will be available or not for future generations.

The term 'sustainable development' was firstly used in 1980 by International Union for the Conservation of Nature and Natural Resources. This term became important in 1987 in the study 'Our Common Future' of 'World Commission on the Environment and Development'. This study is also known as Brundtland Report. Sustainable development is the development which satisfies wants of present generation without reducing the capacity of want satisfaction of the future generations.

Sustainable development is based on the thinking that present generation should be free for own welfare upto the level that welfare of future generations will not be reduced. According to Tinbergon, there are three alternative definitions of allocation between present and future generations.

(a)   **Weak Sustainability:**

Present generation should not use resources upto that level so that future generations could

not get welfare equal to present generation. Total capital stock should not be reduced.

(b) Strong Sustainability:

According to this definition the stock of balanced natural capital should not be reduced. This definition emphasizes natural capital instead of total capital.

(c) Environmental Sustainability:

According to this definition not only the value of aggregate but physical flow of individual resources should also be maintained.

So environment should be protected along with satisfaction of wants of present population. This approach recommends that the resources used by present generation should equally be maintained for the future generations. The general estimates of U.N.O. show that if present populatin and consumption propensity are continued, two earths will be required for our needs upto 2030.

Indian government is making efforts for the balance between development and environment. Conservation of rivers, improvement in quality of urban air, increase in plantation, rapid increase in established capacity of renewable energy source, adopting public transport system, increase in rural and urban infrastrure, etc. are such efforts of the Indian government. Clean India Mission, Nirmal Ganga Yojana, and Naitonal Solar Mission are the recent efforts.

In Rio conference (June, 2012), under the document "The future We Want", 17 objectives relating to sustainable development were included in the document. These 17 objectives are as under:

Objectives of Sustainable Developmen :

1. To end the poverty in all sections of society.

2. To end starvation, to obtain food security, to improve nutrition and to increase the affirmative agriculture.

3. To ensure health and to increase well-being for all.

4. To ensure inclusive and equality based education and to increase opportunities for all for life long study.

5. To establish sex based equality and to empower girls and women.

6. To ensure permanent availability and management of water and cleanliness for all.

7. To ensure availability of reliable, modern and bearable energy for all.

8. To increase full, beneficial and proper employment and inclusive & sustainable economic development.

9. To construct progressive infrastructure, to increase inclusive & affirmative industrialization and to promote innovation.

10. To reduce inequality among countries.

11. To make cities and human slums inclusive, safe, progressive and affirmative.

12. To decide consumption and production patterns.

13. To take quick action against problems related with climate change and its effects.

14. To protect oceans, seas and sea resources for sustainable development and to use them in the affirmative way.

15. To protect ecological systems of earth and to increase their affirmative uses.

16. To promote peaceful and inclusive societies for affirmative development, to make easily available justice to all and to establish effective, responsible and inclusive institutions.

17. To strengthen the implementation methods and to reactivate the global participation for affirmative development.

A proper place should be given to non-traditional sources of energy (dung gas, L.P.G., wind power, small water plants, solar energy and natural gas) and tradition knowledge of country for sustainable development because these resources have the capacity of long term development without harming environment.

Important Points:

- Environment provides physical, biological and chemical system for our life and raw material for production.

- Any inverse change in organs of earth and atmosphere affecting working of environment adversely is known as environment pollution.

- Main environment pollutions include water pollution, air pollution, soil pollution, lose of biodiversity, lack of solid waste management and noise pollution.

- Industrialization, increasing number of vehicles, deforestation, increasing population, etc. are the causes of environment pollution.

- Pollution can be controlled by development of public transport service, development of clean energy sources, adopting organic agriculture and proper management of wastage.

- Relation with environment in development process should be of such type that not only present generation but also the future generation could not suffer the problem of dissatisfaction of wants. This is the sustainable development.

- Increasing temperature of earth, depletion of ozone layer, loss of biodiversity, etc. are the challenges of environment. Whole of the world must think about control of carbon emission so that life on earth can be better.

Question for Exercise

Objective Type Questions:

1. Function of environment is:
   (a) To provide biological, physical and chemical system for life.
   (b) To provide raw material for production.
   (c) Absorption of wastage
   (d) All of the above ( )

2. The gas which is not responsible for air pollution is:
   (a) Carbon dioxide
   (b) Carbon dimonoxide
   (c) Sulphur dioxide
   (d) Hydrogen ( )

3. Main gas for air pollution is:
   (a) Carbon monooxide
   (b) Carbon dioxide
   (c) Sulphur dioxide
   (d) Methane ( )

4. Gas responsible for depletion of ozone layer is:
   (a) Clorofloro carbon
   (b) Hekxaflow carbon
   (c) Carbondy oxide
   (d) Sulpherdyoxide ( )

5. Which activity is not pollution creater ?
   (a) Dependence on thermal energy resources
   (b) Increasing number of vehicles
   (c) Increasing use of agriculture chemicals
   (d) All of the above ( )

6. In which year the study report 'Our Common Future' (Brundt land Report) of 'World Commission on the Environment and Development was published ?

    (a) 1997   (b) 1980

    (c) 1987   (d) 1960   (   )

7. 'Montreal protocol is related with:

    (a) Control of ozone layer

    (b) Control of increasing temperature on earth

    (c) Cotnrol of loss of biodiversity

    (d) Non of the above   (   )

8. Kyoto Protocol is related with:

    (a) To control increasing earth temperature

    (b) To control loss of biodiversity

    (c) To control depletion of ozone layer

    (d) None of the above   (   )

9. In which year the 'Earth Conference' was held in Rio De Janero city of Brazil ?

    (a) 1980   (b) 1987

    (c) 1992   (d) 1965   (   )

Very Short Answer Questions:

1. Name two gases responsible for air pollution.

2. Name the gas causing ozone layer depletion.

3. Name any two causes of air pollution.

4. Name any two gases causing increase in earth temperature.

5. Name two gases responsible for acid rain.

6. Write any two factors of soil pollution.

7. Write any two reasons of loss of biodiversity.

8. Write any there types of pollution.

9. Name two Global Conference Declarations (protocol) for controlling environment pollution.

Short Answer Questions:

1. What is meaning of environment ?

2. What is meaning of environment pollution ?

3. Write main types of environment pollution.

4. What is air pollution ? Define.

5. What do you mean by loss of biodiversity ?

6. Define soil pollution.

7. What is meaning of sustainable development ?

8. What is Montreal protocol ?

9. What is Kyoto protocol ?

10. What is meaning of strong sustainability ?

11. Write any four reasons of soil pollution.

Essay Type Questions :

1. What are the functions of environment ?

2. Discuss nature, causes and effects of air pollution.

3. Describe types of environment pollution.

4. Explain the causes of environment pollution.

5. What ae the suggestions for control of environment pollution ?

6. What is sustainable development ? Why is it required ?

Answer to Objective Questions :

(1) d (2) d (3) b (4) a (5) d (6) c (7) a (8) a (9) c

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2. Indian Economy : Mishra & Puri, Himalaya Publications.

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