
UNIT 11 DEVELOPMENT AND UNDERDEVELOPMENT

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11.0 OBJECTIVES

After going through this Unit, you will be able to:

- analyse the relationship between poverty and inequalities in income distribution;
 - describe the nature of poverty and inequalities in income distribution;
 - explain the relationship between growth and poverty, and growth and inequalities; and
- discuss how poverty and inequalities adversely affect economic welfare.

11.1 INTRODUCTION

There has been a growing realisation that economic growth *alone* may not suffice to remove poverty altogether from the developing world. Poverty will continue to persist doggedly as long as the fruits of growth are not equally or at least less unequally, distributed. When it does not happen, growth does not make a dent on the poor sections of the society, although the overall profile of the economy in terms of various indicators like the gross domestic product, and even the per capita income, changes. It is to this twin problem of problem and inequality that we address ourselves to in this Unit.

11.2 POVERTY AND INEQUALITY

The twin problem of poverty and inequality can be illustrated with the help of production possibility curve, as shown in Fig. 11.1.

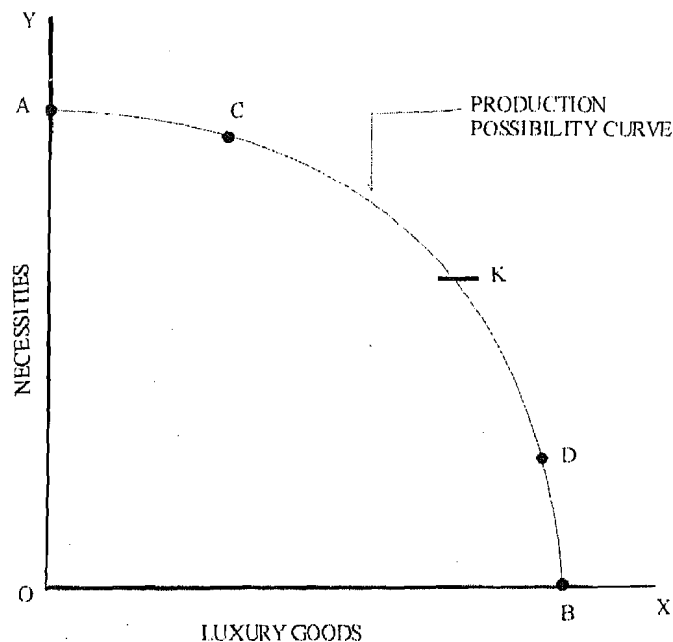


Fig. 11.1

Let us assume, all the goods that can be produced in the economy are grouped in two categories, viz., (i) luxury goods and (ii) necessities.

The curve AB is the production possibility curve, showing the various combinations of two categories of goods that can be produced in this economy, given its total aggregate resources. Any of the combinations marked A, B, C, D or K (or any other conceivable combination of luxury goods and necessities) can be equally efficiently produced in this economy.

If the economy is relatively poor and the income is more equitably distributed, actual production will take place around the point C or between point C and K, i.e., a major proportion of the available resources in the economy would be devoted to the production of necessities, and a smaller proportion to luxury goods.

The converse will be true if the income is inequitably distributed; actual production will occur around the point D. More resources will get allocated to the production of luxury goods, and relatively less to the production of necessities.

The reason for this type of allocation of resources is that basic determinant of production combination in market and mixed economies is the level of aggregate effective demand, and society's effective demand curve for different goods is primarily determined by the level of income and distribution of income.

11.3 NATURE OF POVERTY

Poverty is a plague affecting all parts of the world and it has many faces and dimensions. One of the most important and most common manifestations of poverty is the denial of access to the basic necessities of human existence.

11.3.1 Absolute and Relative Poverty

Poverty is multidimensional. It implies a severe lack of material and cultural goods which impedes the normal development of individuals to the point of compromising their personal integrity and, as such, is 'absolute' poverty. A person in want is someone whose poverty is below the breadline, who is forced into such a degrading and consuming struggle with life that it seriously interferes with any spiritual concerns. From this point of view, to be poor is to be incapable of calling on one's resources or activities to meet one's biological needs or those of one's family, living

in a permanent state of isolation and insecurity which tends to be hereditary, to be hungry, to be neither educated nor cared for, to live in inadequate housing and to work in inhuman conditions. 'Those who suffer from **'absolute'** poverty have no guarantee that they will be able to meet the fundamental costs of living as a human being. (The World Bank has fixed the norm of one dollar one person per-day for this purpose).

A situation of need can also be expressed in terms of the living and working conditions of other members of the same society at the same time. In this sense, poverty is **'relative'**. It is extreme form of inequality in standards of living and degree of protection against insecurity. In this case, poverty applies to individuals and families whose income and other resources, including living conditions and the rules governing poverty, employment and labour, are distinctly below the average level of the society in which they live.

More generally, the concept of poverty is used to refer to 'absolute' poverty. While inequalities of income are related to the 'relative' poverty.

11.3.2 Measurement of Poverty

Theoretically, the concept of poverty can vary from extreme want of necessities resulting in debility due to malnutrition to falling short of having comfortable means.

Different measures of poverty have been developed by professional economists, among these the more important are as follows:

- 1) **Head-Count Ratio:** Absolute poverty may be measured by the number or 'head count' of those whose incomes fall below the 'poverty line'. The poverty line sets a level below which persons live in absolute human misery and their health is always in jeopardy. Different studies have made use of different methodologies to define the poverty line. But more generally, for example in India, in order to define the poverty line, most of the studies (a) have determined the minimum nutritional level of subsistence, (b) have estimated the cost of this minimum diet, and (c) on the basis of the per capita consumption expenditure, have delineated the line of poverty. Where change has in the magnitude of poverty have to be estimated between two different years, account has been taken of changes in the price level by using deflators of one type or another.

A problem with the head count index is its insensitivity to the intensity of poverty. In other words, a head count index simply measures the number of poor below the poverty line. It does not tell us anything about the income shortfall of the poor. It may be desirable to group the poor into, say, three distinct categories, viz., (i) the most destitutes, (ii) the destitutes, and (iii) the poor. There are a number of analytical and policy uses to which the disaggregated information can be put to:

- The discrepancy between the structure of minimum wages and the poverty line can be easily calculated.
- If the official poverty line may be deemed to define the society's norm of subsistence, it would be possible to determine with fair precision the two lower levels of subsistence.
- The other correlates of poverty, such as low calories intake resulting in low physical strength, perhaps also insufficient development of mental facilities which go with poor education and low educational potential, and low trainability, can be scientifically investigated to determine at least the magnitude of the problem of those facilities which lie deep trapped in these kinds of vicious circles and have lost the ability to escape.

A large body of economists also seem to share this view what is required is a measure of poverty that included fulfilment of certain basic human needs.

- 2) **Poverty Gap:** Poverty gap measures the total amount of income necessary to raise the people who are below the poverty line to that line. The concept of poverty gap can be explained with the help of Figure 11.2.

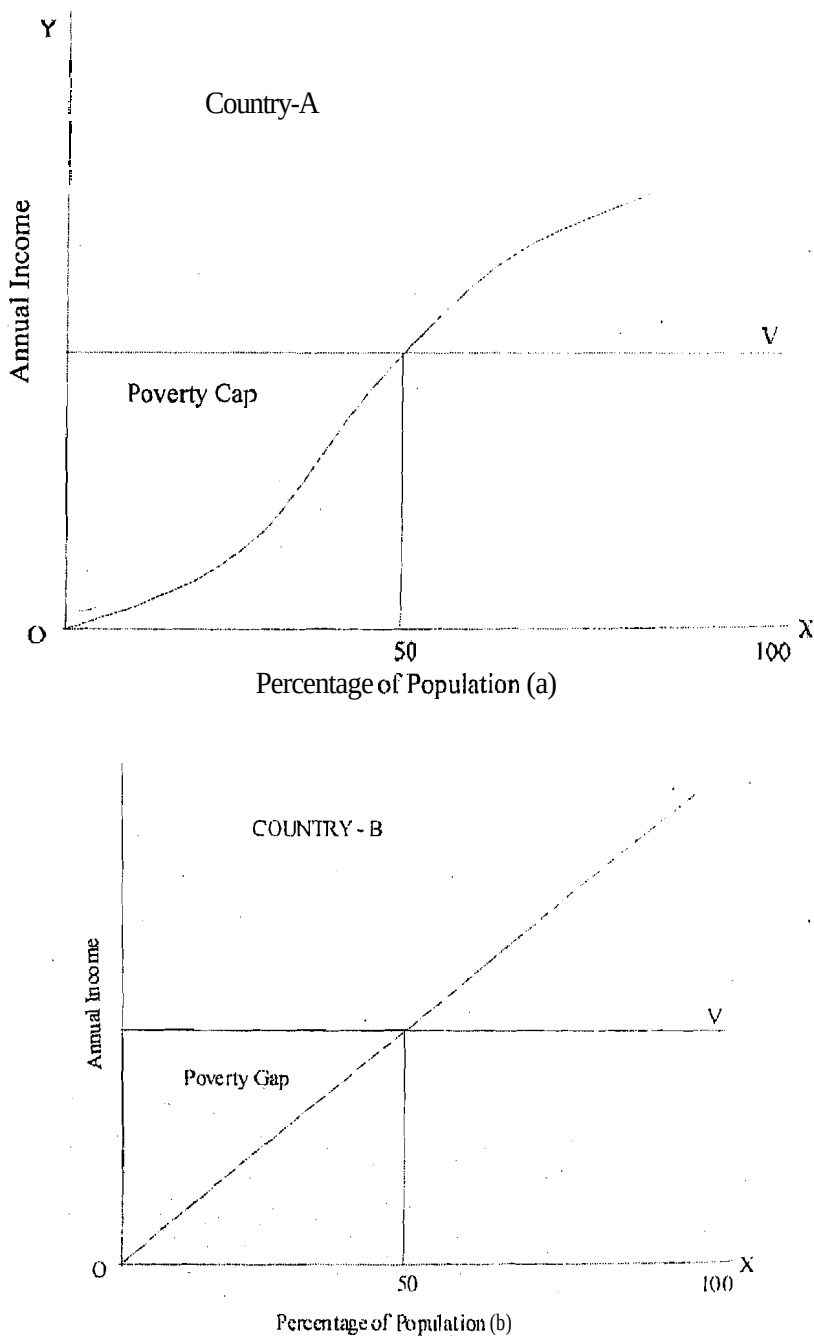


Fig. 11.2

In Figure 11.2, it would be seen that in both country A and D, 50 per cent of the population is below the poverty line. But in country A [Figure 11.2 (a)] poverty gap is more than in country B.

Poverty gap captures the depth of poverty. The poverty gap adjusts the poverty ratio with the difference between the per capita consumption of the poor and the poverty line expressed as a percentage of the poverty line. This is, therefore, a measure of the magnitude of the effort that would be required to shift the consumption of all persons below the poverty line to the level of the poverty line.

- 3) **Squared Poverty Gap:** It is composed of not only the poverty ratio and the poverty gap ratio, but it also captures the consumption distribution of the poor as measured by the coefficient of variation. This measure explicitly takes into account the higher intensity of efforts that are required to address the people who are progressively further below the poverty norm in order to bring them out of poverty.
- 4) **Other Measures:** Other measures of poverty, per se, include Foster-Greer-Thoerbeck measure, Sen index, etc.

We summarise below the various measures of poverty.

Let Z represent the poverty line,

M The number of the poor, i.e., the individuals with consumer expenditure less than Z

X_p The average consumer expenditure of the poor

CVP The coefficient of variation of consumer expenditure among the poor

GP The Gini coefficient of consumer expenditure among the poor

N The total population

Then,

$$\text{Head-Count-ratio (H)} : \frac{M}{N}$$

$$\text{Poverty-gap-ratio (R)} : \frac{Z - X_p}{Z}$$

$$\text{Poverty-gap-index (PGI)} : \frac{M}{N} \cdot R$$

$$\text{Foster-Greer-Theobacke measure (FGT)} : \frac{M}{N} [R^2 + (1 - R^2)CVP]$$

$$\text{Sen Index} : \frac{M}{N} [R + (1 - R)GP]$$

Check Your Progress 1

- 1) Distinguish between absolute poverty and relative poverty.

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- 2) Distinguish between Head Count Ratio and Poverty Gap.

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3) Distinguish between different measures of poverty.

11.3.3 Functional Impact of Poverty

A discussion about the functional impact of poverty will enable us to link the incidence of poverty to mechanisms that drive its creation. Poverty affects the access of the poor to markets; this has repercussions for the whole economy. Let us examine different aspects of it.

Poor and Access to Credit

It is a paradox of the market system that those who need credit most and for whom every additional rupee has a high marginal satisfaction are precisely those for whom the market cannot make any provision. The poor are denied access to the credit system for the following reasons:

One, in a market system, every loan is backed by a collateral; the collateral is needed by the lender to prevent default, intentional or accidental, by the borrower. The poor have no collateral to offer and, therefore, are denied access to the market.

Two, the repaying capacity of the poor is limited. It is also argued, quite often, that the poor have much to gain by defaulting on repayment than the rich. This argument is based on the general precept of the law of diminishing marginal utility; this can be easily understood with the help of Figure 11.3.

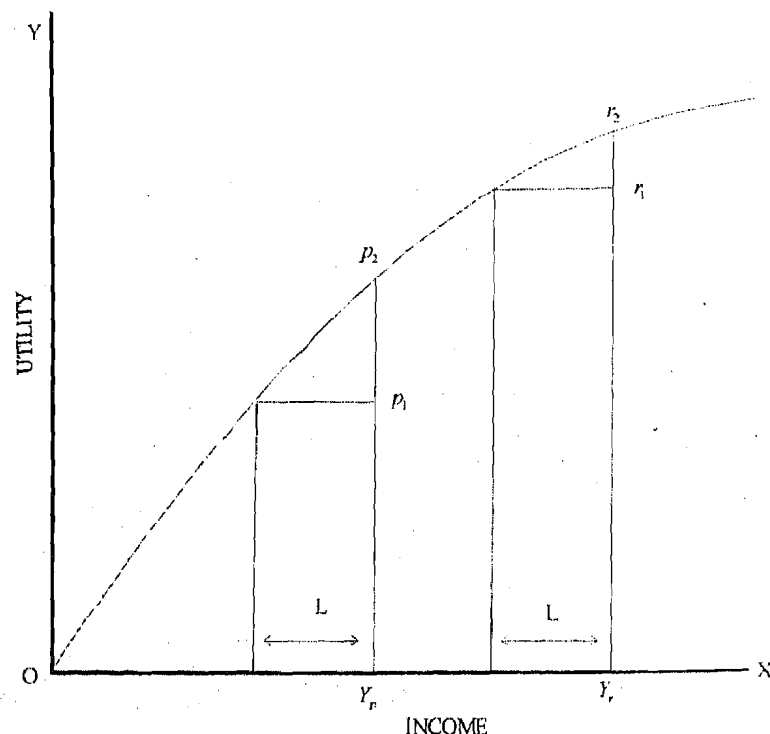


Fig. 11.3

In Figure 11.3, the income is measured on the horizontal axis, and utility on the vertical axis. Y_p measures the income of the poor, and Y_r measures the income of the rich. L represents the amount to be repaid both by the poor and the rich. The utility function shows diminishing marginal utility.

p_1p_2 indicates the utility loss to the poor if they repay back L amount of loan.

r_1r_2 indicates the utility loss to the rich if they repay back L amount of loan.

Since $p_1 p_2 > r_1 r_2$, it is argued that the poor have a less inclination to repay the loan than the rich.

This type of analysis, however, focuses only on the utility function, and tends to regard with other socio-economic realities. For example, a default once implies a total denial of access to credit market in future for good. This threat in itself may be sufficient for a poor household to be more regular and diligent in repayment of loans.

Poor and Insurance

Just as the poor household cannot have easy access to the credit markets, access to another important market institution, viz., insurance, is denied to them. Insurance is needed to meet certain contingencies to which poor are more exposed than the rich.

But the market system denies this access. This may be due to the fact that (i) the poor being illiterate do not understand the mechanism of insurance, and/or (ii) they do not have the means to pay for the premia required to secure insurance cover. The economic explanation for this phenomenon is to be found in the fact that the opportunity cost of the labour for the poor is lower than that of the richer poor; they are likely to earn lower wages when they are employed, and in general, the cost of their time is lower. This feature, in turn, permits them to supply more effort to the task at hand without necessitating a large cut back in the degree of insurance that they receive. The low opportunity cost of effort is helped along by the fact that their marginal utility of consumption is very high.

Poverty and Nutrition

As elsewhere stated and expanded fully in the present course (see Block 5, Unit 18), poor countries are caught in vicious circles of different types. A type of vicious circle operates between poverty and malnutrition. Malnutrition results in general weakness of the body and causes increased illness, vulnerability to infection, retardation of physical and mental growth and the diminution of work capacity, and thus, low productivity and income. The relationship between nutrition and work capacity can be explained with the help of the capacity curve, as shown in Figure 11.4.

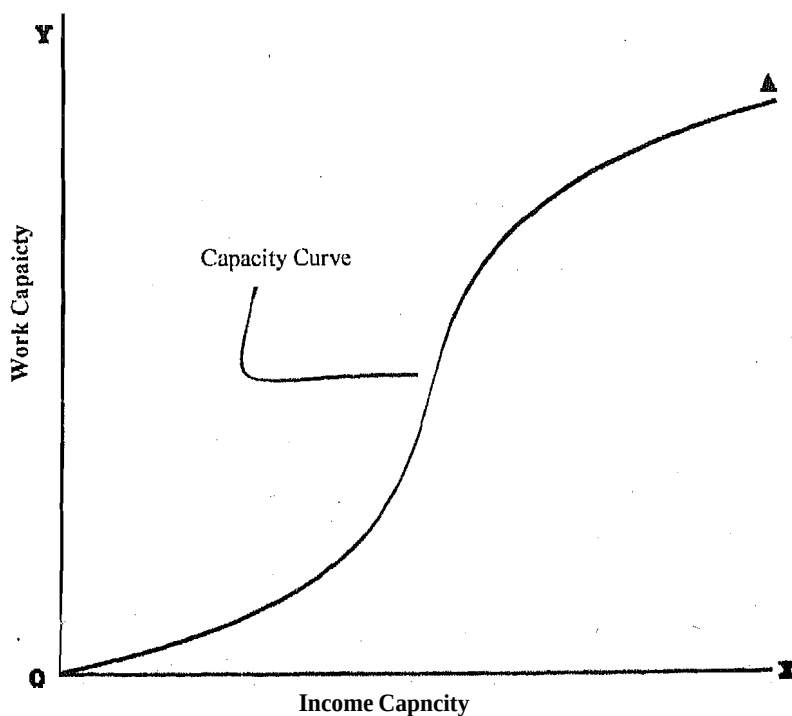


Fig. 11.4

In Figure 11.4, income is being taken as a proxy for nutrition; a direct positive relation between income and nutrition. Income (or nutrition) is measured on the horizontal axis; work capacity is measured on the vertical axis.

Work capacity increases with an increase in the level of income; but beyond a level, diminishing returns set in, as the natural limits imposed by the body's frame restrict the conversion of increasing nutrition into ever-increasing work capacity.

Poverty and the Household

Poverty determines resource allocation within the household. Poor households cannot afford to share their poverty equally. Unequal sharing arises basically from the fact that certain minimum amounts of nutrition, care and economic resources have to be devoted to each person to make his life to be productive and healthy. In situation of extreme poverty, equal division of resources may not benefit anyone because the average amounts are too small. The main benefit of unequal distribution is that it helps some individuals in the household to be minimally productive under extreme circumstances.

11.4 INEQUALITIES OF INCOME

Inequalities of income is the characteristic feature of those economic systems which are described as 'antagonistic'. In antagonistic economic system, the ownership of the means of production is the privilege of one section of society, the others are expected to earn their livelihood working for those who own the means of production. This is true of slavery, feudalism as well as capitalism. Property-owners, who are small in number, acquire large share of the national product, whereas wage-earners who are larger in number are left to themselves to carve out their living from a smaller slice of national product. This phenomenon is known as inequalities of income.

11.4.1 Equalities and Inequalities

The phenomenon of inequalities can be better appreciated by understanding what 'equalities of income' would mean.

Equalities of income do not refer to an 'arithmetical equality' in the distribution of national product among all the individuals living in a society, i.e., every individual gets the same income during a specified period irrespective of his status and job demands. Such a type of income distribution would not only be impossible but would also be largely impracticable, as it would kill all incentive and initiative for hard work. Such differences in income have not only to be tolerated but have to be maintained if the available resources in the economy have to be put to the efficient use.

The differences in income that cause concern and are studied under the phenomenon called 'inequalities of income' are those **that result from disproportionately large differences in income of those who own property and other means of production on the one hand and those who work as labourers for others.** The former category includes those persons who are the recipients of unearned incomes like rent, interest and profits, while the latter claim wages.

These types of inequalities of income and wealth are to be found largely in mixed capitalist economies which work on the principle of free trade. In such economies, the prices of various factor-services are determined by the market forces, i.e., by the forces of demand and supply. Market mechanism forms the very basis of a capitalist economy, the market mechanism is used to justify the inequalities of income existing in these societies. It is held that relatively large reward will go to that factor service which is relatively scarce in supply. Since land, capital and enterprise are relatively more scarce factors of production they command higher prices, whereas labour

because of its being not-so-scarce a factor commands relatively less price. In other words, economic justification of inequalities of income is found in the scarcity of the factor services.

11.4.2 Measurement of Inequalities of Income

A suitable measure of inequalities of income should possess four properties: (i) the anonymity; (ii) scale independence and (iii) population independence, and (iv) transfer principles.

- i) **The anonymity principle** simply states that this measure of inequality does not identify the class of people like the rich or the poor, good or bad people. This measure remains silent about the quality of the people.
- ii) **The scale independence principle** means that the measure of inequality should not depend on the size of the economy. For example, the inequality measure should not depend on whether economy is rich or poor or average. For measuring inequality, one should be interested in the dispersion of income, not its magnitude (though magnitudes are important in poverty measures).
- iii) **The population independence principle** means that measure of inequality should not be based on the number of income recipients. The inequality measure should be independent of size of population.
- iv) **The transfer principle** (sometimes called the Pigou-Dalton principle after its propounders) states that if some income is transferred from a rich person to a poor one, the resulting new income distribution is more equal..

Two Approaches to Measurement

Two approaches are generally followed for measuring income inequality both for analytical and quantitative purposes. These are (A) personal or size distribution of income, and (B) functional distribution of income.

A) Personal Distribution

Personal or size distribution of income approach deals with individual person and the total income he receives. Locational and occupational sources of income are not considered. Suppose two persons A and B receive the same annual income. They will be clubbed in the same income group irrespective of the fact that A may be working for 14 hours a day and B may be working for 4 hours a day. On the basis of this approach a person receiving larger personal income will be included in high income group and another person receiving smaller personal income will fall in the category of low income group. Personal distribution is, thus, based on the income earned by the individuals.

Different methods of measurement of inequalities in personal distribution have been developed. We discuss a few of these as follows:

1) Lorenz Curve

Inequalities of income distribution are generally measured with the help of a Lorenz Curve. Lorenz curve is associated with the name of an American economic statistician, Prof. Max D. Lorenz. He used this curve to measure disparities in the distribution of income. A Lorenz curve is a special type of a cumulative frequency graph. It can be effectively used to portray such data as relating to the distribution of wealth and income among the different segments of population.

The following steps are involved in the construction of a Lorenz curve.

The data relating to population and income distribution is transposed into percentage and arranged into cumulative frequency distribution. A straight line is drawn joining the coordinate points that represent 100 per cent of population and 100 per cent of income. The straight line is known as the **Line of equal distribution**.

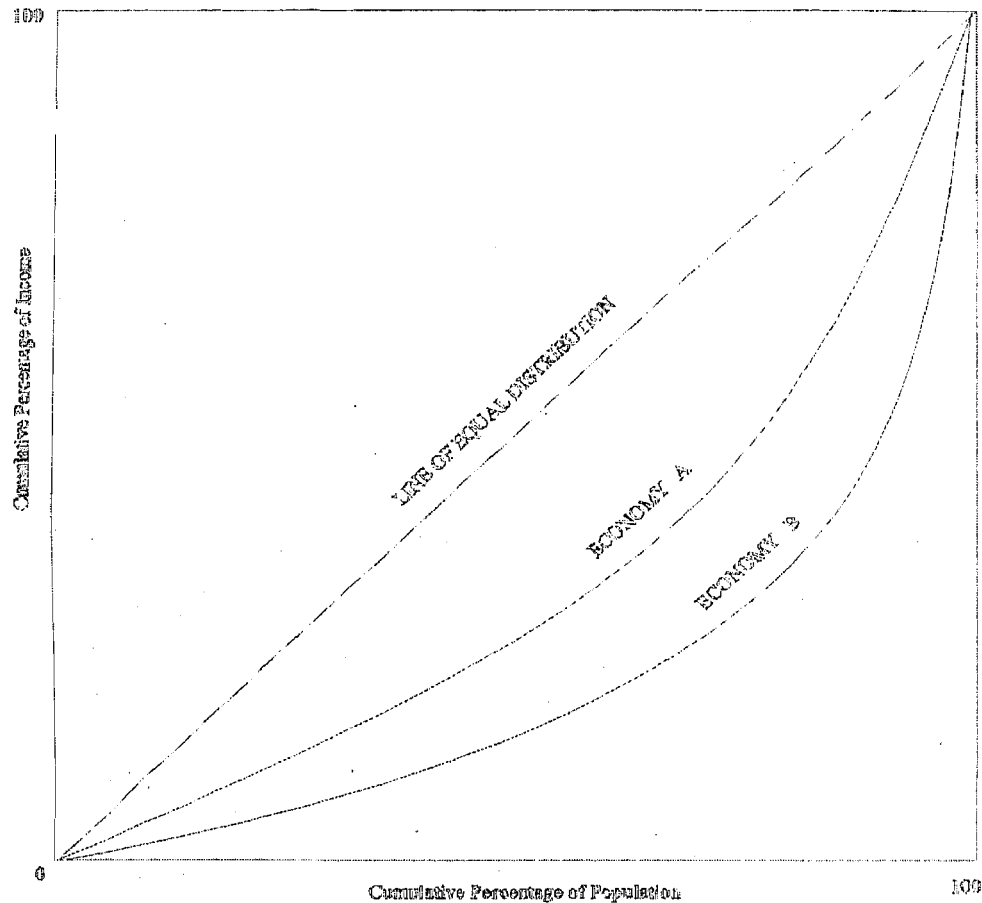


Fig. 11.5: Lorenz Curve

If the actual distribution of income in an economy corresponds to this line, it would show that there are no disparities in income distribution. If the curve representing the actual distribution deviates from the line of equal distribution, it would show that there are disparities. Further, the curve is away from the line of equal distribution, the more disparity it reveals.

In Figure 11.5, cumulative percentage of income is measured along the Y-axis and cumulative percentage of population along the X-axis. The line of equal distribution has been drawn by joining the 100 per cent points on both the axes. Lorenz curves have been drawn for the Economy A and Economy B. It will be seen that Lorenz Curve relating to economy B is further away from the line of equal distribution as compared to economy A. Therefore, there are more disparities in the distribution of income in Economy B than in Economy A.

2) Quintile Distribution

A Lorenz curve is rather cumbersome and it is possible to present the same underlying information on distribution in a numerical format.

The method favoured by the World Bank is to array the distribution by quintiles (20 per cent of the population). For example, the poorest 20 per cent of India's population earns 8 per cent of the income; the richest quintile earns 41.4 per cent.

When comparing two countries, if one has greater percentage share of income accruing in at least one quintile below the highest and is at least equal in the other

three below the highest, the country is said to have 'Lorenz dominance', or to 'Lorenz dominate' the other country.

3) Gini Coefficient and Gini Concentration Ratio

A convenient shorthand summary measure of the relative degree of income inequality in a country can be obtained by calculating the ratio of the "area" between the diagonal and the Lorenz curve divided by the total area of the half-square in which the curve lies. In Figure 11.6, this is the ratio of the shaded area A to the total area of the triangle BCD, i.e.,

$$\frac{\text{Shaded Area A}}{\text{Total Area BCD}}.$$

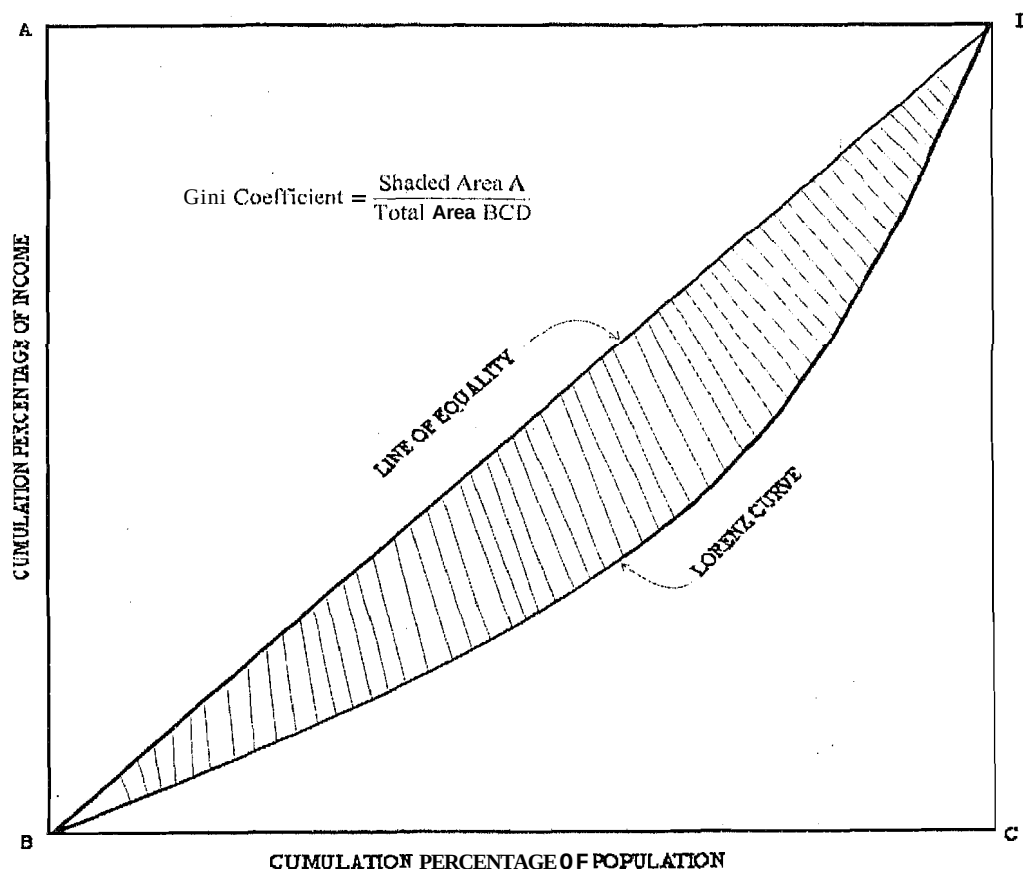


Fig. 11.6

This ratio is known as the "Gini Concentration Ratio", or more simply, the Gini Coefficient, after the Italian statistician C. Gini, who first formulated it in 1921.

Gini coefficients are aggregate inequality measures and can vary anywhere from 0 (perfect equality) to 1 (perfect inequality). It is generally found that Gini coefficient for highly unequal distribution lies between 0.5 and 0.7. While countries with relatively equitable distribution may have Gini coefficient in the range of 0.2 to 0.5.

4) Coefficient of Variation

Coefficient of variation (CV) is a relative measure of dispersion. It is measured as follows:

$$C.V. = \frac{\text{Standard deviation}}{\text{Mean}} \times 100$$

The use of this formula is based on the assumption that income is normally distributed. Coefficient of variation indicates the extent of departure from the normal

distribution of income. Larger the coefficient of variation, greater will be inequality in the distribution of income and vice versa.

B) Functional Distribution

The functional distribution or 'factor share distribution' inquires into the percentage that 'labour' receives in comparison to the percentage of total income received by three other factors of production, in the form of rent, interest and profits.

The significance of this measure is that it attempts to explain the income of a factor input in terms of the contribution the factor makes to the total output. Supply and demand curves are used to determine the unit prices of each production factor.

For the sake of simple diagrammatic explanation, we assume that there are only two factors of production – capital (fixed factor) and labour (variable factor). The determination of factor prices is explained with the help of Figure 11.7.

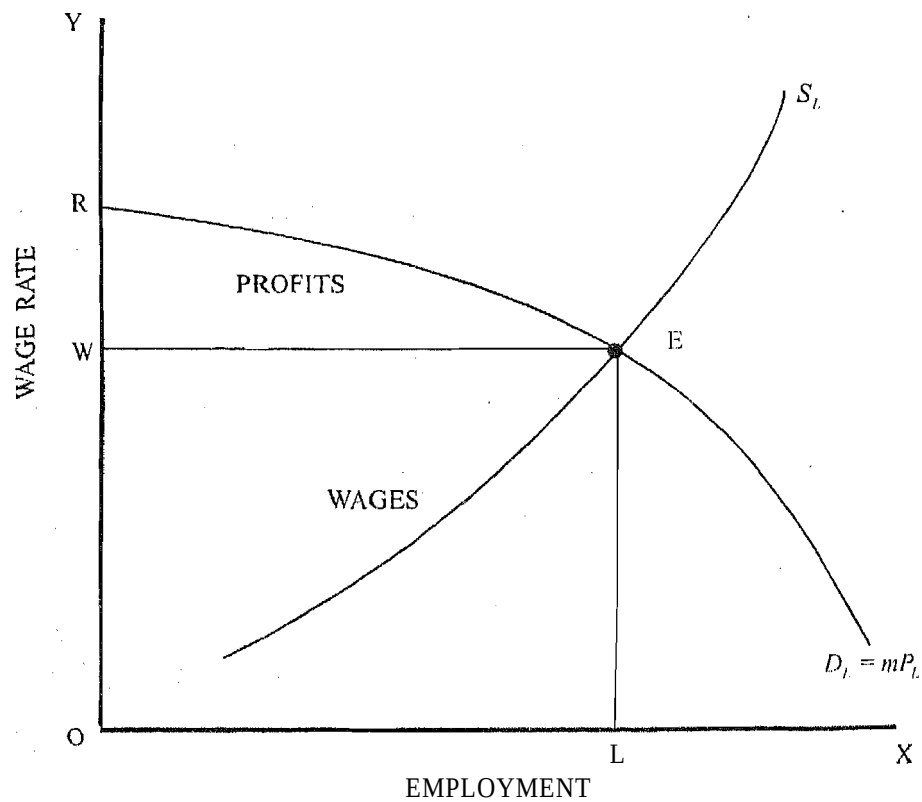


Fig. 11.7

The horizontal axis measures the number of labour employed while the vertical axis measures the wage rate. D_L is the demand curve of labour, it is downward sloping, reflecting the diminishing marginal productivity of labour. S_L is the supply curve of labour, reflecting a direct positive relationship between the wage rate and the amount of labour offered for work. Equilibrium wage is OW ; at this rate, OL workers are offered employment.

With OL workers, total output of the economy is being represented by the area $OREL$. The total output $OREL$ is distributed into two parts: wages and profits. Wages constitute the area $OWEL$, while profits equal the area RWE .

Functional distribution, therefore, reveals that factors receive their rewards on the basis of their function.

The relevance of functional distribution, however, is diminishing for its failure to take into account the role and influence of non-market forces. For example, the role of collective bargaining between employers and trade union in the setting of "modern sector" wage rate and the power of monopolists and wealthy landowners to manipulate prices of capital, land and output to their personal advantage.

1) Describe in brief the functional impact of poverty.

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2) What do you mean by inequalities of income?

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3) Explain in brief the Gini Coefficient.

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11.4.3 Growth and Inequalities

As an economy grows and its income levels expand, what happens to the distribution of income many studies have attempted to trace this relationship. We refer below to two more important of these,

i) **Kuznets' Inverted-U Hypothesis**

Simon Kuznets propounded what has come to be known as inverted-'U' relationship between income distribution and economic growth; this can be illustrated with the help of the Kuznets' curve as in Figure 11.8.

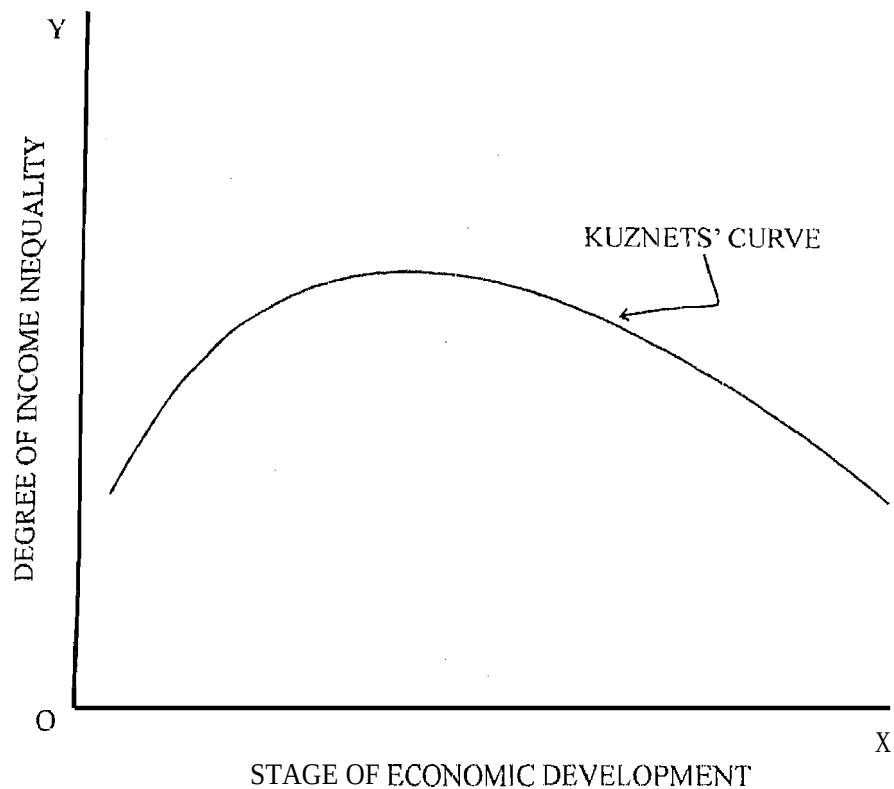


Fig. 11.8

As would be seen from Figure 11.8. The inequality widens during the early phase of economic growth relatively stabilises at a given level and then narrows in the advanced stages of growth.

The increase in inequality in initial stages can be explained in terms of structural changes associated with economic growth; there is a shift in the weight of economic activity in favour of the urban sector characterised by higher productivity. The relation is reversed during the later stages of economic development. Once the rate of expansion in the urban-high productivity sector exceeds the influx of rural migrant workers and the increase in the rate of growth of the urban labour force, it will narrow the income differentials by reducing population in the countryside. Of course, inordinately high rates of population growth can postpone this stage indefinitely.

ii) Gary S. Fields' Prediction

In more recent times, Gary S. Fields has offered predictions about what will happen to inequality in the course of economic growth. He has made use of Lorenz curves to explain these. He talks about three different situations, viz., (1) traditional-sector enrichment growth typology; (2) modern-sector enrichment growth typology, and (3) modern-sector enlargement growth.

1) Traditional-Sector Enrichment Growth Typology

In this type of growth, all the benefits of growth are divided among traditional-sector workers with little or no growth occurring in the modern sector. This process roughly describes, the experiences of countries whose policies focussed on achieving substantial reduction in absolute poverty even at very low incomes and with relatively low growth rates.

Growth results in higher-income, a more equal relative distribution of income and less poverty. Growth causes the Lorenz Curve to shift uniformly upward and closer toward the line of equality as shown in Figure 11.9.

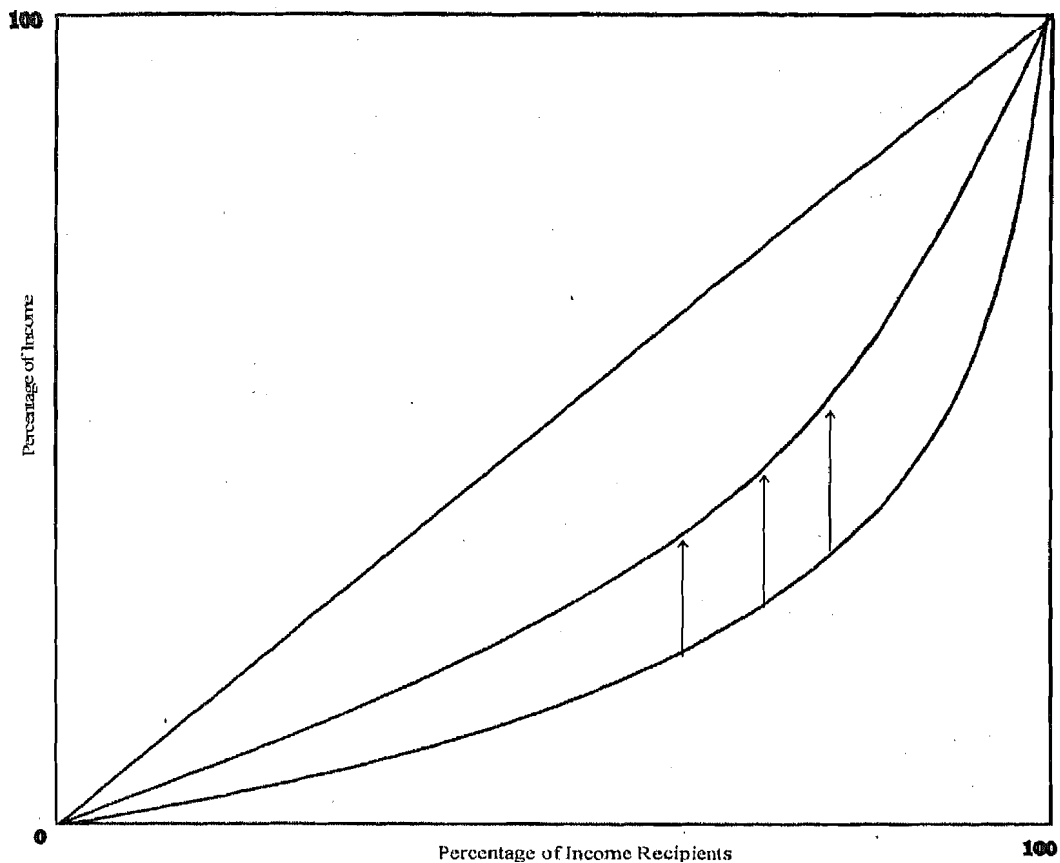


Fig. 11.9

2) Modern-sector Enrichment Growth Typology

In this type of growth, the economy grows, but such growth is limited to a fixed number of people in the modern sector, with both the number of workers and their wages held constant in the traditional sector.

Growth results in higher income, a less equal relative distribution of income and no change in poverty. Growth causes the Lorenz curve to shift ward and further from the line of equality as shown in Figure 11.10.

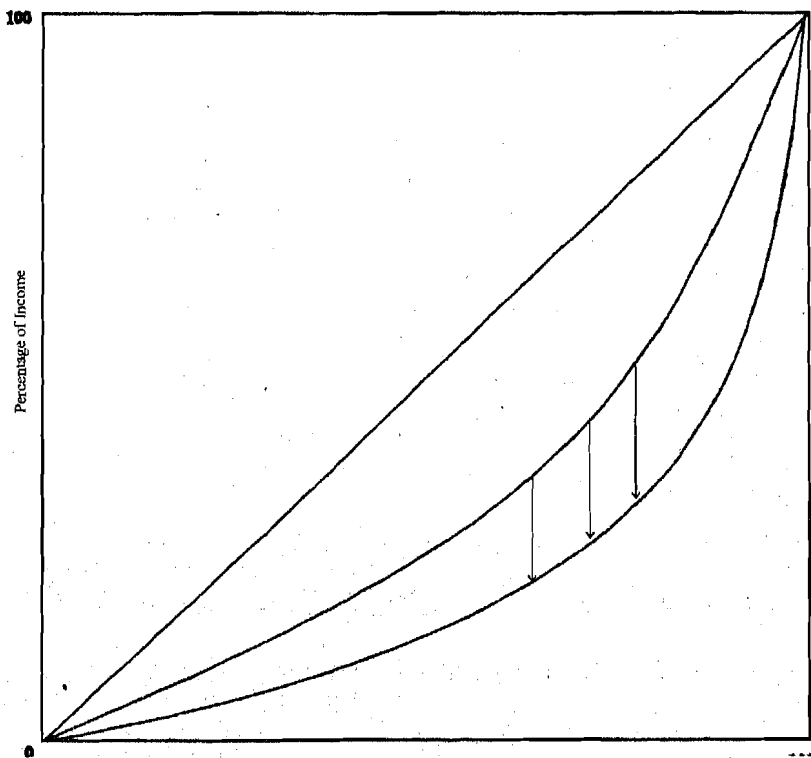


Fig. 11.10

3) Modern-sector Enlargement Growth

In this case, the two-sector economy develops by enlarging the size of modern sector while maintaining constant wages in both sectors. This is the case depicted by Lewis model (see Block 5, Unit 18 below).

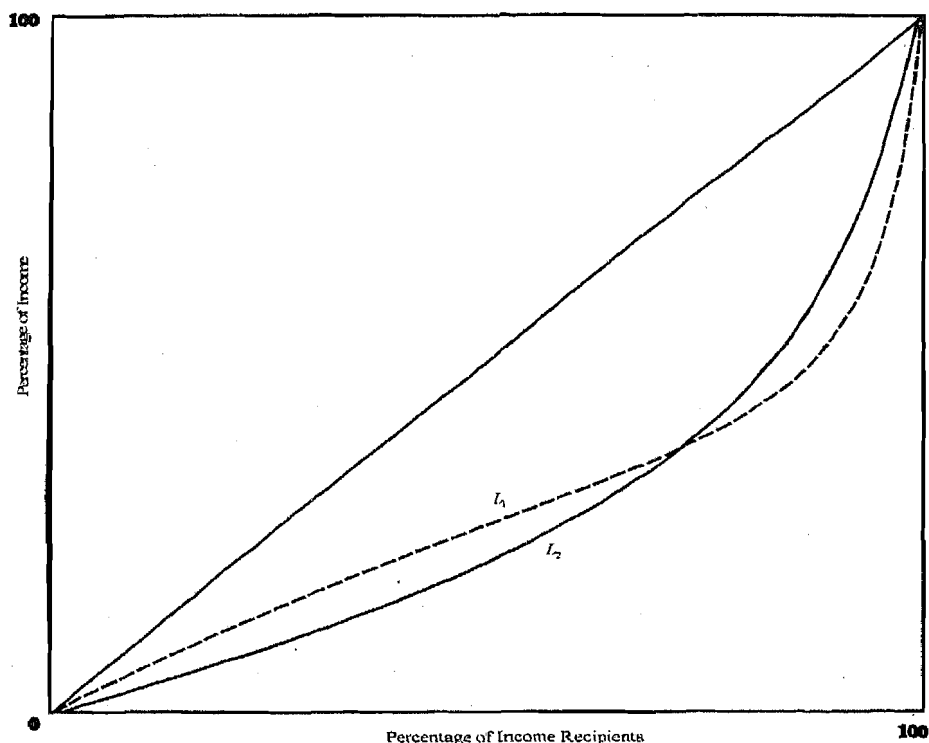


Fig. 11.11

In this type of growth, rise and absolute poverty is reduced, but the Lorenz curves will always cross so that we can not make any unambiguous statement about changes in relative inequality. It may improve or worsen. Fields believes that if this style of growth experience is predominant, inequality is likely to rise in the early stages of development and then it may improve. This is shown in Figure 11.11.

In Figure 11.11 two Lorenz curves cut each other. This may be explained as follows:

The poor who remain in the traditional sector have their incomes unchanged, but these incomes are now a smaller fraction of the larger total, so that the new Lorenz Curve, L_2 , lies below the original Lorenz curve, L_1 , at the lower end of the income distribution scale.

Each modern sector worker receives the same absolute income as before, but now the share received by the richest income group is smaller, so that the new Lorenz curve lies above the original one at the higher end of the income distribution scale. Therefore, somewhere in the middle of the distribution, the new and the original Lorenz curves must cross.

To sum up, according to Gary Fields,

- with traditional-sector enrichment inequality would fall steadily;
- with modern-sector enrichment, inequality would rise steadily;
- under modern-sector enlargement, inequality would **first** fall and **then** rise.

The process of modern sector enlargement growth suggests a possible mechanism that could give rise to Kuznets' "inverted-U hypothesis".

11.5 POVERTY, INEQUALITY AND WELFARE

Inequalities of income are responsible for the vast difference in the standard of living of the people. The rich enjoy a luxurious living, while the poor barely get the essential needs. This has significant welfare implications.

- 1) **Waste in Resource Allocation:** The rich people desire to command high respect in the society. This can do by displaying their wealth. The desire for distinction leads to conspicuous consumption. In a society where a consumer is considered the sovereign the type of wasteful consumption has adverse effects on resource allocation.
- 2) **Loss in Productive Capacity:** Extreme inequalities of income are economically wasteful. On the one hand, the surplus income of the very rich is responsible for much idleness, dissipation, unhappiness and demoralisation. Often this wealth weakens the character of its recipients, especially the second and third generations who had no hand in making it. The influence of poverty, on the other hand, is so less disastrous. Undernourished, poorly clothed, improperly housed workmen cannot be efficient. Out of poverty grows disease, dissipation, vice and crime. Here again is loss of productive power.
- 3) **Loss in Welfare or Net Psychic Income:** This argument is drawn from the law of diminishing marginal utility. If the total national income could be divided in such a manner as to reduce the incomes of the very rich and increase incomes of the very poor, the loss of satisfaction suffered by the wealthy would be more than made up by the greater enjoyments of the poor and the psychic income, or real satisfaction, of society would be increased. The argument can be explained with the help of Figure 11.12.

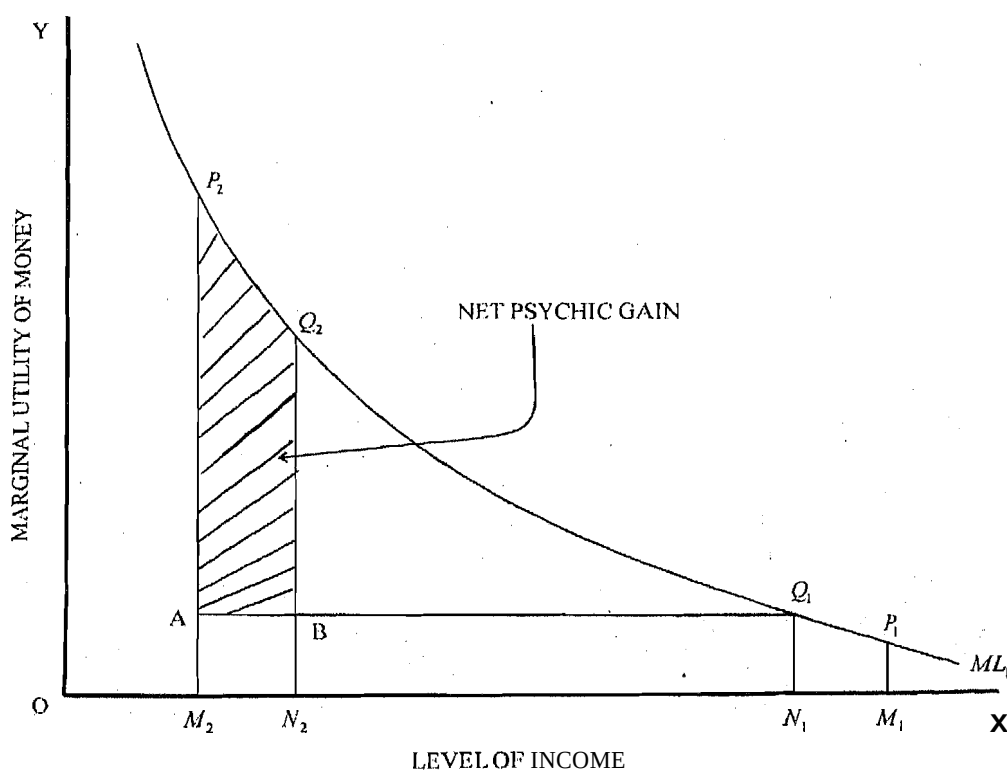


Fig. 11.12

In Figure 11.12, MU is the marginal utility curve of money. We begin with a situation where the distribution of income between the rich and the poor as follows: the rich get OM_1 income, the poor get OM_2 income. The marginal utility of money for the rich would be M_1P_1 and for the poor M_2P_2 .

Suppose, N_1M_1 income is transferred from the rich to the poor, so that the income of the poor increases to ON_2 and that of the rich will be N_1Q_1 and that of the poor N_2Q_2 . The utility of the rich will be N_1Q_1 per unit of money whereas the poor will gain utility equivalent of N_2Q_2 per unit of money. Hence, the aggregate satisfaction in the economy would increase by $N_2Q_2 - N_1Q_1 = Q_2B$ per unit of money.

The total increase in satisfaction is represented by the shaded area ABQ_2P_2 . Thus, greater equality in the distribution of income would lead to net gain in psychic incomes.

Check Your Progress 3

- 1) Explain in brief Kuznets' inverted-U hypothesis.
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- 2) Explain in brief Gary Field's observations on the relationship between growth and inequalities.
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- 3) Explain in brief the relationship between poverty, inequality and welfare.
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11.6 POLICY OPTIONS

As analysed above, poverty and inequality need to be addressed jointly. While rapid economic growth has to be the first and topmost priority in policy initiatives, steps need to be initiated that a sizeable part of the incremental income flows to the weaker sections of the society. For this purpose, a few of the policy initiatives can be analysed as follows:

- 1) **Levelling Down Excessively large Wealth and Income:** The state can take following measures to level down large wealth and income:

- Heavy checks on unearned incomes. Unearned incomes are the primary source of inequalities of income.
- Progressive taxation. While framing the tax structure the adverse effects on incentives have to be borne in mind.
- Checks on inheritance. Heavy taxes in the form of estate duties and inheritance tax may help reduce the size of wealth that passes down from a generation to another.

2) Levelling Up the Lowest Incomes: We can suggest the following measures in this direction:

- Guaranteed minimum income so as to ensure subsistence living for everybody.
- Equality of opportunity; the state should make provisions for discovering latent ability, and then see to it that each one is given an opportunity to develop his own particular attitude as fully as may be necessary to bring them to fruition.
- Extension of social benefits.

In short, an economy can modify its institution and in such a way as to promote equity and bring it in harmony with 'productivity' and 'efficiency'.

11.7 LET US SUM UP

Economic growth involves a progressive improvement in the utilisation of natural and human resources and updating of technology over time leading to capital accumulation and expansion of national income resulting in a higher output per head of population. Ordinarily, this should result in alleviation of poverty. But it has been the experience in the developing countries that growth has resulted in growing inequalities in the distribution of income. As a result, the situation of the poor has only worsened. This requires an intervention by the state to ensure that a sizeable share of incremental income flows down to the poor.

11.8 'KEY WORDS

Absolute Poverty: Inability to provide for one's own biological needs of sustenance.

Asset: An entity possessing market or exchange value, and forming part of the wealth or property of the owner.

Head Count Ratio: The proportion of the number of people living below the line of poverty in the total population.

Line of Poverty: The minimum level of income required to purchase the basic needs of sustenance.

Relative Poverty: An extreme term of inequality.

Trickle Down: A process whereby a part of the income generated by the asset-owning class filters down to the asset-less section of the society.

11.9 SOME USEFUL BOOKS

Fields, Gary S. (2000), *Poverty, Inequality and Development*

Mathew, A.S. and Mark A Robinson (2000), *"Economic Reforms and Poverty Reduction"*, Vikas, New Delhi

Sacha, Ignacy (2000). *Understanding Development*, Oxford University Press, New Delhi

Todaro, Michael P. (2004), *Economic Development* Longman Group UK Limited, NY

11.10 ANSWERS/HINTS TO CHECK YOUR PROGRESS

Check Your Progress 1

- 1) See Section 11.3.1
- 2) See Section 11.3.2
- 3) See Section 11.3.2

Check Your Progress 2

- 1) See Section 11.3.3
- 2) See Section 11.4.1
- 3) See Section 11.4.2

Check Your Progress 3

- 1) See Section 11.4.3
- 2) See Section 11.4.4
- 3) See Section 11.5

1.11 EXERCISES

- 1) Explain clearly the concepts of poverty and inequality, bringing out their relationship explicitly from the point of view of human welfare.
- 2) Briefly state the different methods of measurement of poverty and inequalities, bringing out their differences and inter-relationships.
- 3) Why is it important to check inequalities and poverty? Briefly state the policy options for a state.

UNIT 12 MEASUREMENT AND INDICATORS OF ECONOMIC DEVELOPMENT

Structure

- 12.0 Objectives
- 12.1 Introduction
- 12.2 Development Gap
- 12.3 Growth and Development
 - 12.3.1 Modern View
 - 12.3.2 Concept of Economic Development
 - 12.3.3 Economic Development and Structural Change
- 12.4 Indicators of Economic Welfare
 - 12.4.1 GDP as an Indicator of Economic Welfare
 - 12.4.2 Per Capita Income as an Index of Economic Welfare
- 12.5 Alternative Measures of Economic Welfare
 - 12.5.1 Poverty-Weighted Index of Social Welfare
 - 12.5.2 UNRISD's Core Indicators of Development
 - 12.5.3 The Physical Quality of Life Index (PQLI)
 - 12.5.4 The Human Development Index (HDI)
 - 12.5.5 The Capability Poverty Measure
- 12.6 Let Us Sum Up
- 12.7 Key Words
- 12.8 Some Useful Books
- 12.9 Answers/Hints to Check Your Progress
- 12.10 Exercises

12.0 OBJECTIVES

After going through this unit, you will be able to:

- distinguish between 'economic growth' and 'economic development' and identify the respective indicators;
- describe the limitations of GDP (or its derivative per capita income) as a measure of economic welfare; and
- discuss alternative indicators of economic development and their limitations.

12.1 INTRODUCTION

There are serious discrepancies in the standards of **living** of people in different countries, This is primarily because countries are at varying stages of economic growth and development. What is economic development? This is the core issue of discussion in this Unit. Economic development is something more than economic growth, While economic growth focuses on national output alone, economic development pays attention to the broader concept of economic welfare. **Economic** growth is a necessary condition for raising the level of economic welfare; but it may **not prove** a sufficient condition. Something more besides increased output of goods and services may be required to promote economic welfare, The other difference between economic growth and economic development is that economic development

entails certain changes in the structure of the economy in the course of economic growth. The level of technology, the share of agriculture, the rates of population growth, and the composition of consumption goods all may change as a nation traverses the path of development. Thus economic development necessarily implies economic growth, but the converse may not be true.

12.2 DEVELOPMENT GAP

Development gap refers to the **discrepancy between the standards of living in countries at either end of the income distribution.**

The magnitude of the gap can be read from the data provided in table 12.1 below:

Table 12.1: Income and Population Differences among Groups of Countries

Income Groups by GNI per Capita	Number of Countries	GNI (US \$ m)	Population (w)	GNI per Capita (US \$)	% of World Population	% of World GNI
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low (\$785 or less)	63	917	2,460	410	41	3.2
Lower Middle (\$ 786 – \$ 3,115)	54	2,324	2,048	1,130	34	7.4
Upper Middle (\$3116 – \$9635)	38	3,001	647	4,040	11	9.6
High (\$9636 or more)	52	24,994	903	27,680	15	79.8
World	207	31,315	6,053	5,170	100	100

The data presented in Table 12.1 reflect enormous differences in living standards that no statistical inaccuracies can hide over 6 billion people are alive today, but the wealthy parts of the world – where people work no more than 40 or 50 hours per week, enjoy substantial leisure, and have a level of consumption at least *half* that attained by the United States – contain no more than 15 per cent of the world's population. Many of the rest struggle for subsistence, existing on a level at or below that endured by peasants in the ancient Egypt or Babylon.

The **World Development Report** from the World Bank points out that much has been achieved in poverty reduction but much remains to be done:

There has been a significant drop in the percentage of people living in extreme poverty (that is living on less than \$ 1 per day). Even the absolute number of very poor people declined between 1980 and 1988 by at 200 million, to almost 1.2 billion. The decrease was primarily due to the decline in the number of very poor people in China as a result of the strong growth from 1980 onwards. Since 1993, there have also been encouraging signs of renewed poverty reduction in India, Sub-Saharan Africa, by contrast, has been its number of very poor people increase steadily ... Development strategies will need to do better in eliminating abject poverty. The estimated 1 billion very poor people is of the same order of magnitude as the independently generated figures on the number of people who are undernourished and underweight. The average income in the richest 20 countries is now 37 times that in the poorest 20. This ratio has doubled in the past 40 years, mainly because of lack of growth in the poorest countries.

The development gap has been widening for the very poorest countries. This is a problem of both output and population. Rapid development is required to bridge this gap. But what is development?

12.3 GROWTH AND DEVELOPMENT

Traditionally, economic development has been considered as synonymous with economic growth. Economic growth has been defined as **"an increase in real terms of the output of goods and services that is sustained over a long period of time, measured in terms of value added."** Three points, as follows, need be noted in this definition:

- Economic growth is essentially a dynamic concept and refers to a **continuous increase in output**. The word 'dynamic' here denotes a process taking place over time. This is contrasted with 'static' which does not so much mean 'unchanging' as 'at a point in time'. Forces that generate growth generate a positive rate of change from a lower to a higher level of output may be welcome but that is not growth.
- The term 'output' is ambiguous, in that it can mean either **total** output or output **per capita**. An increase in total output is 'extensive growth' (when population and production increase at about the same pace). When one thinks of growth in the context of an increase in standards of living or of the welfare of a population, one naturally thinks of output per head of population. However, an increase in total output over time may also be an extremely significant phenomenon, where, for example, economies of scale are important.
- We ought strictly to distinguish between **output** and **output capacity**. Most theories of growth, in so far as they deal with increases in labour forces or the accumulation of capital, implicitly deal with changes in output capacity, whereas actual changes in output over time are also influenced by the ability of an economy to utilise accumulated capacity.

12.3.1 Modern View

Modern economists, however, question this identity between 'economic growth' and 'economic development'; **"development is not the same thing as economic growth"**. Suppose, by analogy, we were interested in the difference between 'growth' and 'development' in human beings. Growth involves change in overall aggregates such as height or weight, while development includes changes in functional capacity, of ability to adapt to changing circumstances. Growth is an engine, not an end in itself. The end being development. Singapore, with an impressive per capita GDP of over 30,000, may be an impressive role model for other developing countries as it has very successfully achieved **'growth'**. But Singapore did not till 1997 qualify to count among the 'developed' nations.

The traditional concept of viewing economic development as synonymous with economic growth was based on what came to be known as the **'trickle-down strategy'**, which implies that the effects of rising incomes and output would ultimately trickle down to the poor so that they would benefit poor as well as the rich. The modern economists reject this view and stress the need for strategies designed to meet the needs of the poor directly. Hence, economic development has come to be redefined in terms of the reduction or elimination of poverty, inequality, and unemployment within the context of a growing economy. "Redistribution with growth" has become an accepted paradigm. Prof. Dudley Seers poses the basic question about the meaning of development very clearly when he states:

The questions to ask about a country's development are therefore: what has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If all three of these have declined from high levels then

beyond doubt this has been a period of development for the country. If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result "development" even if per capita income doubled.

Economic development, in its essence, must represent the whole gamut of change by which an entire social system, tuned to the diverse basic needs and desires of individuals and social systems within that system, move away from a condition of life widely perceived as unsatisfactory towards a situation of life regarded as materially and spiritually "better".

12.3.2 Concept of Economic Development

In view of the above considerations, economic development is now being defined "as the process of increasing the degree of utilisation and improving the productivity of the available resources of a country which leads to an increase in the economic welfare of the community by stimulating the growth of national income".

It follows from this definition that the progress of development has to be assessed by reference to two separate indicators, namely, (i) the indices of 'production' or GDP, and (ii) the indices of 'economic welfare' of the community. The former covers what may be called the 'growth' aspects of development.

So defined, the concept of economic development emphasises the achievement of the following three objectives:

- To increase the availability and widen the distribution of basic life sustaining goods such as food, shelter and protection. This, however, would be possible with a fast increase in real per capita income.
- To raise standards of living including, in addition to higher incomes, the provisions of more goods, better education and greater attention to cultural and humanistic values, all of which will serve not only to enhance material well-being but also to generate individual and national self-esteem.
- To expand the range of economic and social choice to individuals and nations by freeing them from servitude and dependence not only in relation to other people and nation-states, but also to the forces of ignorance and human misery. Economic development is to be assessed ultimately by the enhancement of the 'positive freedom'.

In view of the above three objectives, the quality of life is regarded as an important index of development. It is contended that such quality is not adequately reflected in the index of per capita income growth. Several factors are involved in the measurement of such 'quality'; some of these factors are non-monetary, while others can be measured in money terms. There is a need to set up a synthetic index of these different factors to measure economic development and quality of life.

12.3.3 Economic Development and Structural Change

Econometricians have attempted to measure structural changes in economies as development proceeds; much of the pioneering work was done by Prof. Simon Kuznets on the basis of historical data, and the analysis has been extended and refined under current data, notably under the leadership of Hollis Chenery. Such studies seek to reveal how key economic parameters change as countries develop. We may note the following as important changes:

- **Constituents of GDP Change:** More generally, in terms of percentage shares, saving rates increase as income grows, government revenues (and expenditure) increase, food consumption drops and non-food consumption increases, out of services – and, of course, also industry – increases, while agriculture falls.

- **Employment Changes:** Employment changes reflect the shift in output and changes in productivity. Labour in the primary sector of the economy does not fall as rapidly as its share in output; the reverse is true for employment in industry where increase in labour productivity is more easily secured.
- **Shift in the Composition of Exports:** As development proceeds, exports will account for a larger proportion of income and there will have been a marked shift in the composition of exports, so that the value of export of manufactures rises relative to that of primary products. Imports will also have risen and earnings and payments will be roughly balanced.
- **Rate of Increase in Population:** As incomes increase, the rate of increase in population may be expected to fall, as the birth rate declines along with a fall in the death rate. The population would still be increasing, but gradually the rate of growth will tend to peter out.
- **Distribution of income:** Income would at first become more unequally distributed and then this trend would be reversed. (We have already discussed this relationship in detail in Unit 11, referring to what has come to be known as inverted U-shaped hypothesis propounded by Simon Kuznets).

12.4 INDICATORS OF ECONOMIC WELFARE

We have defined economic development as the sum total of economic growth (a quantitative aspect) and economic welfare (a qualitative aspect). We have presented above a few important indicators of economic growth. Now, let us shift our attention to the indicators of economic welfare.

12.4.1 GNP as an Indicator of Economic Welfare

GNP estimates are more commonly employed as an indicator of economic welfare. An increased output of goods and services, it is believed, implies an increased availability of goods and services for consumption, enabling a wider choice and a better standard of living; these are the hallmarks of economic development.

However, this simple positive relationship between increase in GDP and increase in economic welfare is subject to certain qualifications. Among these, the following are noteworthy:

1) Changes in the Size of GDP and Economic Welfare

- If the GDP increases but the population of the country increases in a greater proportion, the total economic welfare will decline. As a result of increased population, the per capita income will decline, which means lesser purchasing power than before, lower standard of living, and consequently, lower economic welfare.
- While analysing the relationship between the size of GDP and economic welfare, the behaviour of the price movements must be thoroughly studied. GDP calculated at current prices is always deceptive and increase in its size, will not promote economic welfare. Estimates of real GDP (i.e., GDP calculated at fixed base prices) can provide a better measure.
- GDP consists of those goods and services which are transacted in the market and fetch money value. We know that a part of the total produce is kept by the producers for self-consumption. Now, suppose that this retained produce (which is not part of GDP) is offered for sale in the market, it will definitely fetch money value and as a result GDP will also increase. In fact, the total output is same, but since it has now come to the monetary sector, it becomes

a part of the **GDP** and hence increases its value. Such an increase in GDP will not increase the economic welfare.

- iv) If the increase in the size of GDP is the result of prolonged working hours, increased employment of children in production, unhealthy and polluted atmosphere inside the factory premises, such increase in GDP will not promote or be symptomatic of economic welfare.

2) **Changes in the Composition of GDP and Economic Welfare**

Composition of GDP refers to the kinds of goods and services produced in an economy. Changes in the composition of GDP may sometimes increase economic welfare and may at other times decrease it. Let us consider the following cases:

- i) If the total production has increased on account of more production of capital goods, it will not increase economic welfare. No doubt the money value of the total output has increased, but the volume of consumer goods, on which depends the real economic welfare, has not increased. It is only when the proportion of consumer goods increases in the total output the GDP can promote economic welfare.
- ii) If the GDP has increased on account of larger production of war-goods, the resultant increase will not increase economic welfare. This may no doubt lead to increased fighting capacity of the country but it will do no good to economic welfare.

3) **Changes in the Distributioa of GDP and Economic Welfare**

If the GDP increases and yet is not fairly distributed or it is concentrated in a fewer hands, it will not promote economic welfare. It is so because as the rich people get richer the additional money income does not provide them the same marginal utility as the preceding unit of money income. In other words, the law of diminishing marginal utility also applies to the additional money income so that the economic welfare instead of increasing will diminish.

Wlien the distribution of GDP changes in favour of the poor, they start getting more commodities and services than before; as a result the economic welfare increases. Any transfer of income from the rich to the poor, generally, promotes economic welfare. In fact, there is a unique relationship between one's economic welfare and that part of liis income whiicli he spends on consumption and consequently smaller is his economic welfare compared to this total income. The poor people who spend a major proportion of their total income on consumption, as a matter of fact, will get larger utility from the transferred income as compared to the rich people.

Transfer of income from the rich to the poor, however, does not increase economic welfare always, especially if additional income in the hands of the poor gets frittered away on such things as simply reduce their welfare.

Check Your Progress 1

- 1) What do you mean by development gap?

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2) Distinguish between economic growth and economic development.

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3) What type of structural changes take place in an economy as it develops?

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4) Highlight the important limitations of GDP as an indicator of economic welfare.

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12.4.2 Per Capita Income as an Index of Economic Welfare

Ordinarily speaking, per capita income is considered as an indicator of the standard of living in a country: any improvement in it is taken as a proxy for improvement in the standard of living.

True, but there are certain limitations beyond which we cannot rely on this single average.

One, per capita income is a simple average which is derived by dividing the income of all the nationals of a country. It shows only the size of slice from the national cake that should be going to each individual. It cannot tell us anything about the actual distribution. In other words, per capita income estimates are silent about the distribution of income. To that extent, per capita income estimates may not be very useful, especially if there is a highly skewed income distribution favouring the rich in an economy.

Two, per capita income estimates are also silent about the composition of output – the nature of goods and services produced in the economy.

Three, standard of living is also affected by the type of expenditure incurred by the government authorities. If the government meets the collective wants of education, public health, public transportation, safe drinking water, etc., the people may enjoy a higher standard of living, even with modest per capita income.

Four, for the purpose of international comparison, per capita income estimates are framed in a common monetary denominator, usually the American Dollar. This common denominator cannot take account of purchasing power differences in different countries.

12.5 ALTERNATIVE MEASURES OF ECONOMIC WELFARE

Economists have been trying to identify alternative measures of economic development which should reflect in a true manner the changes in the standard of living.

12.5.1 Poverty-Weighted Index of Social Welfare

The use of GNP as a method of comparing welfare or as a method of comparing the development performance of different countries can be misleading. This is especially so when different countries have varied distributions of income.

This can be illustrated with the help of Table 12.2.

Table 12.2: Typical Distribution of Personal Incomes in a Developing Country by Income Shares – Quintiles and Deciles

Individuals	Personal Income (Money Units)	Percentage Share in Total Income	
		Quintiles	Deciles
1	0.8		1.8
2	1.0		
3	1.4		3.2
4	1.8	5	
5	1.9		3.9
6	2.0		
7	2.4		5.1
8	2.7	9	
9	2.8		5.8
10	3.0		
11	3.4		7.2
12	3.8	13	
13	4.2		9.0
14	4.8		
15	5.9		13.0
16	7.1	22	
17	10.5		22.5
18	12.0		
19	13.5		28.5
20	15.0	51	
TOTAL (National Income)	100.0	100	100.00

In Table 12.2, 20 individuals represent the entire population of a country and are arranged in ascending order of annual personal income, ranging from the lowest of 0.8 units to the highest 15.0 units.

The population is grouped into quintiles of four individuals each. The first quintile represents the bottom 20% of the population on the income scale. This group of individuals receives only 5 per cent of the national income; the second quintile receives 9 per cent, and so on.

The rate of income growth in each quintile is a measure of economic welfare growth of that class. The total welfare of society is measured as the simple weighted sum of the growth of income in each class and is expressed as under:

$$G = w_1g_1 + w_2g_2 + w_3g_3 + w_4g_4 + w_5g_5 \quad \dots(1)$$

Where,

G = weighted index growth of social welfare

g_i = ($i = 1, 2, 3, 4, 5$) is growth rate of the i th quintile

w_i = ($i = 1, 2, 3, 4, 5$) is the welfare weight of the i th quintile

On the basis of the given weights, equation (1) can be used to measure weighted index of social welfare as under:

$$G = 0.05g_1 + 0.09g_2 + 0.15g_3 + 0.22g_4 + 0.51g_5 \quad \dots(2)$$

Now, suppose that income growth rate of bottom 60 per cent of population is zero (i.e., $g_1 = g_2 = g_3 = 0$) while that of top 40% is 10% (i.e., $g_4 + g_5 = 0.10$). The equation (2) can be written as

$$\begin{aligned} G &= 0.05(0) + 0.09(0) + 0.15(0) + 0.22(0.10) + 0.51(0.10) \\ &= 0 + 0 + 0 + 0.022 + 0.051 = 0.075 \end{aligned} \quad \dots(3)$$

It means that the GNP would rise by 7.3% even if there is zero change in the incomes of the 60 per cent population at the bottom of the income ladder.

To remove this anomaly and to make GNP estimates a better representative of the society's welfare, an alternative measure based on equal weights or poverty-weighted index has been evolved.

- 1) **Equal-Weights Index** assigns equal weights to growth of income in each income class. All people are treated equally. We can illustrate the working of this index with the help of data presented in Table 12.2 above.

The economy has been divided into quintiles; equal-weight index would give a weight of 0.2 to the growth in income in each quintile using equal-weight index in our example of 10% income growth of the top two quintiles with bottom three quintiles showing no change, we would have

$$G = 0.20g_1 + 0.20g_2 + 0.20g_3 + 0.20g_4 + 0.20g_5 \quad \dots(4)$$

Substituting the values of g_i in equation (4), we get

$$\begin{aligned} G &= 0.20(0) + 0.20(0) + 0.20(0) + 0.20(0.10) + 0.20(0.10) \\ &= 0 + 0 + 0 + 0.020 + 0.020 = 0.04 \end{aligned} \quad \dots(5)$$

The equal-weight index shows that social welfare has increased by 4% as compared to 7.3% increase shown earlier.

- 2) **Poverty-Weight Index** involves the use of 'subjective' social values in income growth rates of only the bottom 40%. In other words, we might arbitrarily place a welfare weight on w_1 of 0.60 and on w_2 of 0.40 while giving zero weights to w_3 , w_4 and w_5 .

In this situation, the social welfare index for the country can be calculated as follows:

$$\begin{aligned} G &= w_1g_1 + w_2g_2 + w_3g_3 + w_4g_4 + w_5g_5 \\ &= 0.60g_1 + 0.40g_2 + 0g_3 + 0g_4 + 0g_5 \\ &= (0.60)(0) + (0.40)(0) + (0)(0) + (0)(0.10) + (0)(0.10) \\ &= 0 \end{aligned}$$

The use of poverty-weighted index shows that there is no improvement in the social well-being of the bottom 40% of the population. The GNP growth records 7.3% improvement in the social welfare.

In short, a useful summary of the degree to which economic growth is based towards relative improvement of high-income or low-income groups is the positive or negative divergence between a weighted social welfare index and the actual growth rate of GNP.

Check Your Progress 2

- 1) Bring out the limitations of per capita income as an index of economic welfare.

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- 2) What is equal-weights index?

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- 3) What is poverty-weight index?

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12.5.2 UNRISD's Core Indicators of Development

One of the early studies on the first group of composite indicators was carried out by the United Nations Research Institute on Social Development (UNRISD) in 1970. The study was concerned with the selection of the most appropriate indicators of development and an analysis of the relationship between these indicators at different levels of development. The result was the construction of a composite social development index. Originally, 73 indicators were examined. However, only 16 indicators (9 social indicators and 7 economic indicators) were ultimately chosen (see Table 12.3)

Table 12.3: List of Core Indicators of Socio-economic Development Provided by the United Nations Research Institute on Social Development (UNRISD)

Expectations of Life at Birth
Percentage of Population in location of 20,000 and over
Consumption of animal protein, per capita, per day
Combined primary and secondary enrolment
Vocational enrolment ratio
Average number of persons per room
Newspaper circulation per 1000 population
Percentage of economically active population with electricity, gas, water, etc.
Agricultural production per male agricultural worker
Percentage of adult male labour in agriculture
Electricity consumption, kilowatt per capita
Steel consumption, kg per capita
Energy consumption, kg of coal equivalent per capita
Percentage GDP derived from manufacturing
Foreign trade per capita, in 1960 U.S. Dollars
Percentage of salaried and wage earners to total economically active population

These indicators were selected on the basis of their high inter-correlation to form a development index using weights derived from the various degrees of correlation. The development index was found to correlate more highly with individual social and economic indicators than per capita GNP correlated with the same indicators. Rankings of some countries under the development index differed from per capita GNP rankings. It was also found that the development index was more highly correlated with per capita GNP for developed countries than for the developing countries. The study concluded that social development occurred at a more rapid pace than economic development up to a level of \$ 500 per capita income (1960 prices)

Another study that sought to measure development in terms of a pattern of interaction among social, economic and political factor was conducted by Irma Adelman and Cynthia Morris, who classified 74 countries according to 40 different variables relating to these aspects. Factor analysis was used to examine the interdependence between social and political variables and the level of economic development to arrive at a measuring yardstick. The researchers found numerous correlations between key variables and economic development.

This approach of factor analysis is based on an underlying normative assumption that there is a unique path of development. The performance of the developing countries is, therefore, sought to be judged in terms of the path traced by the developed countries. There seems to be no logical or historical justification for this assumption. Furthermore, there is usually an emphasis on measuring inputs, such as the number of doctors or hospital beds per 1000 population or enrolment rates in primary schools to measure health and education, when outputs, such as life expectancy and literacy, and the actual objectives of development. This would not be a fallacy if the underlying "production function" transforms all 'inputs' into 'outputs'.

12.5.3 The Physical Quality of Life Index (PQLX)

One well-known endeavour in this area was Morris D. Morris's development of the *Physical Quality of Life Index (PQLI)*. Three indicators were used to form a simple composite index:

- 1) Life expectancy at age 1;

- 2) Infant mortality rate; and
- 3) Literacy rate.

For each indicator, the performance for individual countries is rated on a scale of 1 to 100, where 1 represents the worst performance by any country and 100 the best performance. For life expectancy, the upper limit of 100 was assigned to 77 years (achieved by Sweden in 1973) and the lower limit of 1 was assigned to 28 years (the life expectancy of Guinea-Bissau in 1950). Within these limits, each country's life expectancy figure is ranked from 1 to 100. For example, a life expectancy of 52, midway between the upper and lower limits of 77 and 28, would be assigned a rating of 50. Similarly, for infant mortality, the upper limit was set at 9 per 1000 (achieved by Sweden in 1973) and the lower limit at 229 per 1000 (Gabon, 1950). Literacy rates, measured as percentages from 1 to 100, provide their own direct scale. Once a country's performance in life expectancy, infant mortality, and literacy has been rated on the scale of 1 to 100, the composite index for the country is calculated by averaging the three ratings, giving equal weights to each.

Although the study found that countries with low per capita GNP tended to have low PQLIs and countries with high per capita GNP tended to have high PQLIs, the correlations between GNP and PQLI were not substantially close. Some countries with high per capita GNP had very low PQLIs – even below the average of the poorest countries. Other countries with very low per capita GNP had PQLIs that were higher than the average for the upper-middle-income countries.

Table 12.4 provides a sample of the Third World countries ranked both by per capita incomes and PQLIs in the early 1980s. The data seem to indicate that significant improvements in the basic quality of life can be achieved before there is any great rise in the per capita GNP or, conversely, that a higher level of per capita GNP is not a guarantee of a better quality of life. Note in particular the wide PQLI variations for countries with similar levels of per capita income such as Angola and Zimbabwe, China and India, Tanzania and Gambia, Taiwan and Iraq. Most striking contrast is that between Saudi Arabia and Sri Lanka.

Table 12.4: Per Capita GNP and PQLI

Country	Per Capita GNP (\$)	PQLI
Gambia	348	20
Angola	790	21
Sudan	380	34
Tanzania	299	58
Zimbabwe	815	63
China	304	75
Pakistan	349	40
India	253	42
Sri Lanka	302	82
Singapore	5220	86
Taiwan	2503	87
Saudi Arabia	12720	40
Iraq	3020	48
Brazil	2214	72

Source: Todaro, M.P. Economic Development, 5th Edition

- 1) What are the three indicators used to form a composite index for PQLI?
 - a) b)..... c)
- 2) Best performance of a country is represented with a score of
 - a) 100; b) 10; c) 1; d) 20
- 3) The GNP and PQLI are highly correlated for all the countries. Is it True or False?

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- 4) Discuss in about five sentences the experience of high GNP countries and low GNP countries with regard to PQLI.

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12.5.4 The Human Development Index (HDI)

The latest and most ambitious attempt to analyse the comparative status of socio-economic development in both developing and developed nations systematically and comprehensively undertaken by the United Nations Development Programme (UNDP) in its annual series of Human Development Reports. The centre-piece of these reports, which were initiated in 1990, is the construction and refinement of a Human Development Index (HDI). Like the PQLI, the HDI attempts to rank all countries on a scale of 0 (the lowest human development) to 1 (highest human development) based on three goals or end-products of development.

- 1) *longevity* is measured by life expectancy at birth;
- 2) *knowledge* as measured by a weighted average of adult literacy (two-thirds) and mean years of schooling (one-third weights); and
- 3) *income* as measured by adjusted real per capita income (i.e., adjusted for the differing purchasing power of each country's currency and for the assumption of rapidly diminishing marginal utility of income).

Note: For a more detailed study at HDI and other related indicators students may look at Block-I, Unit 1 in the course on Indian Economic Policy.

Using these three measures of development and applying a complex formula the HDI ranks all countries into three groups: low human development (0.00 to 0.49), medium human development (0.50 to 0.79) and high human development (0.80 to 1.00). It should be noted that HDI measures relative, and not absolute, levels of human development and that its focus is on the ends of development (longevity), knowledge,

material choice) rather than the means (as with per capita **GNP** alone). Further, while PQLI focuses only on the physical indicators of health and education, HDI assigns a role to income as well, by including adjusted real per capita income as one of the indicators. In this sense, HDI could be considered a refinement of PQLI as well as of per capita GNP as indicators of development.

Table 12.5: Comparison of **HDI** and **CPR** with the real per capita GDP

	Real GDP (PPP\$) Per Capita	HDI	CPM
USA	24680	0.940	
Sweden	17900	0.933	
Japan	20660	0.938	
South Korea	9710	0.886	8.6
Sri Lanka	3030	0.698	19.3
Pakistan	2160	0.442	60.8
India	1240	0.436	61.5
Bangladesh	1290	0.365	76.5
China	2330	0.309	17.5
UK	17230	0.924	
Germany	18840	0.920	
Brazil	5500	0.796	10.0
Tanzania	630	0.364	39.4
Iraq	3413	0.599	39.9
Algeria	5570	0.746	49.5
Kuwait	21630	0.836	10.8

Source: Human Development Report

Table 12.5 shows that the Human Development Index, along with the figures for real per capita GDP (PPP\$) for a sample of developed and developing nations. A comparison of these two figures is done by a comparison of the ranks of the countries by these two measures – by taking the difference. A positive number shows by how much a country's relative ranking rises when HDI is used instead of GDP per capita, and a negative number shows the opposite. Clearly, this is the critical issue for HDI as well as any other composite social indicator such as the PQLI. If country ranking did not vary much when HDI is used instead of GDP or GNP per capita, the latter would (as some economists claim) serve as a reliable proxy for socio-economic development, and there would be no need to worry about such things as health and education indicators.

We see from Table 12.5 that there is no direct correspondence between the ranking by the HDI measure and that by the per capita real GDP (PPP\$). It is interesting to note that even though countries with high HDI tend to have higher adjusted real per capita GDP. Within and occasionally across the three subgroups we find some countries whose HDI is considerably higher than others even though the latter have substantially lower per capita incomes. Thus, for example, we see that Tanzania's HDI is slightly higher than Guinea's (0.364 and 0.306 respectively) even though Guinea's real per capita GNP is almost 3 times higher than Tanzania's. There are many other such cases, which make it clear that complete stress on GNP growth may not be enough to solve the problem of poverty or deprivation in the under-developed countries.

Although the HDI gives us a broader perspective on progress towards development, it should be pointed out that

- 1) its creation was in part motivated by a political strategy designed to focus attention on health and education aspects of development;
- 2) the three indicators used are good but not ideal (e.g., the UN team wanted to use nutrition status of children under age 5 as their ideal health indicators, but the data were not available;
- 3) the national HDI may have the unfortunate effect of shifting focus away from the substantial inequality within countries;
- 4) the alternative approach of looking at GNP per capita rankings and then supplementing this with other social indicators is still a respectable one; and
- 5) one must always remember that the index is one of relative rather than absolute development, so that if all countries improve at the weighted rate, the poorest countries will not get credit for their progress.

12.5.5 The Capability Poverty Measure (CPM)

Turning to the capability side of the story, with the help from Amartya Sen, "Human Development Report (1996)" has invented a multi-dimensional measurement, calling it an index of Capability Poverty Index. The objective behind construction of this index is to focus on deprivation rather than on availability. Participation of the people in the development process would be conditional on their capability, captured in terms of the health and educational status; basic here being survival, and access to education and various public and private resources. The index, it is believed, represents a truer picture of those who are so deprived that they no longer have the chance or choice to improve their lives.

The report measures human poverty in terms of deprivations:

- a) *deprivation of life* (nearly one-third of the people in the least-developed countries are not expected to survive to 40);
- b) *deprivation of basic education* (particularly of girls); and
- c) *deprivation of access to public and private resources*, including safe water.

The corresponding indicators are percentage of children under five who are underweight, percentage of women over the age of 15 years who are illiterate and percentage of births unattended by trained health personnel. *The CPM, therefore, focuses on people's lack of capabilities in the country rather than on the average capabilities in the country.*

While this constitutes the basis for the construction of this new index, it also alters the focus of recommendations for governmental intervention in these sectors. The goals of governmental intervention get suitably modified. In terms of per capita GNP (US dollars) India is still one of the poorest countries of the world; even many of the poorer African countries have done better in their performance. Table 12.4 clearly shows that countries like Sri Lanka, Pakistan, Iraq, Gambia, Angola, Tanzania, Zimbabwe, even Sudan have a higher per capita GNP than India. But in terms of PQLI, Pakistan, Gambia, Angola, Sudan have a much lower ranking than India. So, it is vividly clear *that Indian experience has been mixed in achieving growth as well as improvements in the standards of living of its population.*

The figures for CPM for the less developed countries too are presented in Table 12.5. It should be noted that the performance of the countries as per the CPM does not correspond directly with the ranking according to HDI.

Looking more closely at Table 12.5, it can be noticed that South Korea and Kuwait have more or less the same HDI (0.886 and 0.836 respectively) but the per capita GNP of South Korea is only about 40 per cent of that of Kuwait. This indicates that *higher level of per capita income is necessary but not sufficient condition for better*

human development. The case is similar for the pair of China and Iraq. Both have more or less equal HDI but China's per capita income is about 35 percent lower than Iraq's. Farther, whatever be the measure that is being considered, the table 12.5 also indicates that India has a long way to go to achieve rapid growth and betterment of quality of life of its population in comparison to most other countries of the globe.

Check Your Progress 4

- 1) What is the difference between the indices developed by UNRISD on the one hand and HDI or PQLI on the other? Briefly describe these indices.

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- 2) What is the significance of the Capability Poverty Index? How does it differ from HDI or PQLI? (Answer in four lines)

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- 3) Consider HDI and PQLI and discuss what is the difference in the policy implications in the use of these two development indicators? (Answer in five lines)

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12.6 LET US SUM UP

Different countries of the world have reached varying levels of development; a big development gap exists between the countries at the top of the development ladder and those at the bottom of the ladder. The gap has only been widening. Some countries have experienced rapid increases in output of goods and services; but these have not translated into mass economic welfare. In view of this, economists have been making a distinction of economic growth and economic development. While GDP estimates work as a good indicator economic growth, these suffer from serious limitations when viewed as indicators of economic development. Different alternative measures of economic development, therefore, have been developed and experimented with, like the PQLI, the HDI, etc.

12.7 KEY WORDS

Human Development Index: An index measuring national socio-economic development, based on measures of life expectancy at birth, educational attainment, and adjusted real per capita income.

Income Per Capita: National income of a country divided by total population.

Infant Mortality Rate: Deaths among children between birth and 1 year of age per 1000 live births.

Levels of Living: The extent to which a person, family, or a group of people can satisfy their material and spiritual wants. If they are able to afford only a minimum quantity of food, shelter and clothing, their levels of living are said to be very low. If they enjoy a great variety of food, shelter, clothing, and other things, such as good health, education, and leisure, they are enjoying relatively high levels of living.

Literacy: Ability to read and write.

Literacy Hate: The percentage of population aged 15 and above that are able to read and write.

Malnutrition: A state of ill-health resulting from an inadequate or improper diet, usually measured in terms of average daily protein consumption.

National Income: Total money value of all final goods and services produced in an economy during a period of time, usually a year.

Physical Quality of Life Index (PQLI): A composite social indicator reflecting the average of three indices: life expectancy at birth, literacy rate, and infant mortality rate.

Social Indicators: Non-economic indicators of development, such as, life expectancy at birth, literacy rate, infant mortality rate and doctors per 1000 population.

Vicious Circle: A self-reinforcing situation in which factors tend to perpetuate a certain undesirable phenomenon.

Factor Analysis: refers to the analysis in which weights is given to various variables (or indicators) according to the importance accorded to it.

12.8 SOME USEFUL BOOKS

EPW Research Foundation (1994), *"Social Indicators of Development - IP"*, *Economic and Political Weekly*, May 21, pp. 1300-1308

Eswaran, Mukesh & Kotwal, Ashok (1994), *Why Poverty Persists in India*, Oxford University Press, New Delhi, Chapter 1 pp. 1-15

Meier, G.M. (1991), *Leading Issues in Economic Development*, Oxford University Press, Oxford, Fourth Edition

Todaro, Michael P. (1994), *Economic Development*, Longman Group UK Limited, NY, Chs. 1, 3, 4, Fifth Edition

12.9 ANSWERS/HINTS TO CHECK YOUR PROGRESS

Check Your Progress 1

- 1) See Section 12.2
- 2) See Section 12.3
- 3) See Sub-section 12.3.3
- 4) See Sub-section 12.4.1

Check Your Progress 2

- 1) See Sub-section 12.4.2
- 2) See Sub-section 12.5.1
- 3) See Sub-section 12.5.1

Check Your Progress 3

- 1) See Sub-section 12.5.3
- 2) See Sub-section 12.5.3
- 3) See Sub-section 12.5.3
- 4) See Sub-section 12.4.3

Check Your Progress 4

- 1) See Sub-section 12.5.4
- 2) See Sub-section 12.5.5
- 3) See Sub-section 12.5.4

12.10 EXERCISES

- 1) What do you mean by development gap? How do you distinguish between economic growth and economic development?
- 2) Evaluate the usefulness of (i) GDP, and (ii) per capita GDP as measures of economic development.
- 3) Evaluate alternate indicators as good measures of economic development

UNIT 13 POPULATION AND DEVELOPMENT

Structure

- 13.0 Objectives
- 13.1 Introduction
- 13.2 Human Resources and Economic Development
 - 13.2.1 Human Resources as Factor Services
 - 13.2.2 Human Resources as Units of Consumption
- 13.3 Malthus and After
 - 13.3.1 Optimum Theory of Population
 - 13.3.2 Theory of Demographic Transition
- 13.4 Nature of Population Problem in Developing Countries
 - 13.4.1 Other Demographic Characteristics of Developing Countries
- 13.5 Population, Poverty and Environment
 - 13.5.1 Population and Poverty
 - 13.5.2 Population and Environment
- 13.6 Need for a Population Policy in a Developing Economy
 - 13.6.1 Components of Population Policy
- 13.7 Let Us Sum Up
- 13.8 Key Words
- 13.9 Some Useful Books
- 13.10 Answers/Hints to Check Your Progress
- 13.11 Exercises

13.0 OBJECTIVES

After reading this unit you will be able to:

- discuss the two way relationship between population growth and economic growth: a large population may stimulate growth, as well as hinder it;
- examine the views of Thomas Robert Malthus and point out its shortcomings;
- describe the different stages in a demographic transition and their relationship with economic growth; and
- analyse the need for a suitable population policy like in a developing poverty.

13.1 INTRODUCTION

Human resources are both the instrument and the goal of economic development. A large population implies availability of more human resources as to work as factors or inputs; it may raise the production potential, especially if other complementary resources are available. But a large population may become a burden if suitable work opportunities cannot be found for it. The growth of population worldwide has followed a pattern: slow to begin with, accelerates in middle, and ultimately slows down. Those nations which take a long time to move from the second stage to the third stage get confronted with the problem of 'population explosion'. Most of the densely-populated developing economies have been caught in this phase; increasing population has proved a burden for them. Therefore, in such economies, a two-pronged policy has to be pursued: to create more employment opportunities on the

13.2 HUMAN RESOURCES AND ECONOMIC DEVELOPMENT

Human resources are both the instrument and goal of economic development. As an instrument, human resources supply an essential factor service that makes the other factors work, viz. labour and entrepreneurial ability. In this role, human resources determine the size of total output in the economy. On the other hand, all development activity in an economy is undertaken to provide better living conditions to human beings. Human resources, as consumption units, share the total output of the economy. Thus, we can look upon human resources in two roles, viz. (a) as factor services, and (b) as units of consumption.

13.2.1 Human Resources as Factor Services

Human resources, as factor services, provide labour and entrepreneurship. More people mean more resources.

As such, population growth does contribute to economic growth, and not insignificantly. Some of the important points to be considered from this point of view are as follows:

- 1) **Minimum Scales:** Some infrastructure is only possible with minimum density levels. Examples are roads, dams, ports and irrigation system. Industrial output in many areas is subject to strong economy-of-scale effects. Where division of labour and scale economies are limited by small populations, an increase in the number of people can have a positive scale effect that raises productivity and investment. Economies of scale constitute one of the most important positive elements arising from population growth.
- 2) **Demographic transition and savings:** Underdeveloped countries have populations with a high proportion of young dependents; when the child dependency ratio is high, the population consists of a relatively large number of consumers and relatively few workers. Hence, consumption will be high relative to earnings and saving activity will be low. During the demographic transition, the number of workers rises relative to consumers, income rises relative to consumption and savings increase.
- 3) **Capital formation in agriculture:** In agriculture the saver, the producer of capital and investor are often the same unit -- the family farm. In the off-season the family clears new land, irrigates, builds fences and barns, constructs roads, dykes and wells. With higher population growth, the farmer and his family will put in more hours on this type of capital formation increasing the agricultural capital stock.

This relationship is presented in literature on demography in form of what is known as the 'Boserup Sequence', so named after its author Ester Boserup. According to her, as population grows, land and other natural resources become scarcer relative to labour, and access to markets improves. As a result, agricultural intensification occurs. Relative price changes and food prices increase as demand for food rises. This process generates the need for new institutions, such as private property rights. The new institutions facilitate the adoption of more intensive techniques and greater investments, which increase yields. The natural resource base improves as it becomes more valuable. Moreover, economies of specialisation and of scale associated with the provision of infrastructure and public services emerge, leading to a greater supply of these services.

- 4) **Labour force participation:** Higher dependency ratios accompany climbing rates of population growth. This may affect labour force participation in terms of hours worked, entry and retirement age, and women's employment outside house. It has already been mentioned that hours worked for capital formation in agriculture can increase. An increase in urban children can lead to more women and children joining the labour force, and can prevent earlier retirement, swelling the workforce.
- 5) **Trade Specialisation:** In the Heckscher-Ohlin model of trade, where a country specialises and exports goods that embody relatively large amounts of its abundant factors, a high growth rate in one factor (labour) would enable the country to specialise in goods using that factor intensively (e.g., the average cost of employing labour in Europe, including social and welfare costs, is \$ 20 an hour, \$ 19 in the United States and \$ 18 in Japan – and a rough average of \$ 1.65 in most of Asia). Assuming the nation is already exporting labour-intensive goods, it would simply specialise more and trade more. The growing labour supply enables the country to participate more in trade, and the gains it receives help to offset 'diminishing returns.
- 6) **Technological Changes:** The pace of technological change may pick up the larger the talent pool from which to draw the people for work on various frontiers of science. There are probably some economies of scale to technological change and size effects upon markets may encourage competition, forcing the more rapid spread of technical know-how. Simon Kuznets identifies following circumstances in which a large population facilitates economic growth.
 - i) existence of a variety of unutilised resources
 - ii) rising younger groups which an expanding population throws up facilitating mobility of labour
 - iii) division of labour becoming easier
 - iv) an increasing stock of useful knowledge and advancing technology for the utilisation of human and physical resources.

13.2.2 Human Resources as Units of Consumption

In their role as units of consumption, human beings make a demand on the national product of the economy. In this capacity, their number matter. If the stage of population is more than what can be absorbed by the national product, i.e., if there is over-population, it leads to a number of problems, among which the more important are as follows:

- 1) A rising population makes demand on food stocks of the economy; not infrequently, a wide gap emerges between requirements and available supplies. This causes scarcities and shortages.
- 2) A rising population also implies that a large part of the nation's output is used up in meeting the current consumption requirements, only a small balance is left towards meeting the investment needs. This slows down the process of capital formation and hence of development; we may in this connection refer to what R.H. Cassen has called (i) savings effect, and (ii) investment effect.

The Saving effect argues that savings are reduced by population growth because of the increase of the so-called 'burn of dependency'. With high fertility, and declining mortality in younger and older age groups, the population acquires an increasing proportion of people in the non-working age groups relative to those of the working age. Since all must consume while relatively few produce, consumption per head must rise and savings per head must fall even if productivity is rising, savings are less than they would be with a smaller number of dependents per worker.

The investment argument says that, with an increasing population, a share of investible resources has to be devoted to reproducing for the unproductive people “unproductive” facilities – particularly social overhead capital – which would be unnecessary if the population were not growing. The composition of investment is altered in an unproductive direction instead of additions of capital going to raise the productivity of the existing labour force; investment becomes merely “demographic investment” instead of real investment.

Coale and Hoover compared the economy along two time paths (i) one with higher fertility, and (ii) the other with lower fertility.

If the economy proceeds along the first path, savings would be lower and a share of investment would also be diverted to unproductive uses. When fertility differences do not affect labour size, GNP per capita would be lower under higher fertility than under lower fertility. In the longer run, with higher fertility and more labour force, the production potential of the economy would be more and the GNP would grow faster. But the increase in GNP may not compensate for the growth of population, and hence the increase in GNP per capita would be lower under higher fertility than under lower fertility.

- 3) A large population also adversely affects the balance of trade of an underdeveloped economy. Such a country needs imports of industrial raw materials and capital goods to meet the needs of economic growth. But when its requirements for food are higher than the available domestic supplies, it has to divert its scarce foreign exchange resources to food imports. It has to make a choice between food imports and development imports. The choice may quite often be a hard one, so that it chooses to carry the burden of trade deficit.
- 4) A direct consequence of over-population is the problem of unemployment with all its attendant evil effects, both economic and social.
- 5) The social overhead requirements of a country keep increasing with additions to the population. This means that again its investment resources get diverted from physical capital to investment in manpower resources.

In a nutshell, a large population may be a handicap.

13.2.3 Final Call

As seen above, human resources have a two-pronged relationship with economic development. As a resource, people are available as factors of production to work in collaboration with other factors. As consumers, human beings make demand on the national product of the economy. The size of population, therefore, is a crucial determinant of economic development. A large population may not necessarily contribute to economic growth; in fact, a fast-rising population may find itself in a situation described by economists as ‘overpopulation’.

13.3 MALTHUS AND AFTER

The bogey of overpopulation was raised first of all by Reverend Thomas Robert Malthus in his *Essay on the Principles of Population*, published in 1798. Studies had already drawn attention to “The constant tendency in all animated life to increase beyond the nourishment prepared for it.” Based on the corollary of animal life, Malthus propounded his theory that born out of “The passion between the sexes”. There is tendency for human population in every country to increase faster than the means of subsistence. Such a tendency is attended by the operation of positive checks like an increase in the death rate caused by wars, plague and disease in general. If

such consequences are to be averted, more restraint and operation of potential consideration should be brought into play by the spread of education.

Population theories change with the spirit of the times, and are largely determined by environmental conditions under which they are formulated. The hundred years that followed the presentation of the law of population by Malthus witnessed a phenomenal increase in population in Europe, accompanied by a constantly improving standard of living. Karl Marx in the middle of the 19th century based his theory on capital accumulation and institutional influences. He believed that 'over-population' is not due to limited productive capacity, but is caused by the maladministration of income.

13.3.1 Optimum Theory of Population

The years that followed the First World War witnessed an unprecedented fall in the birth rates in Europe and the USA. It began to be believed that unless some positive steps were taken to raise the fertility rates, population may fall below the minimum required for the exploitation of resources. The bogey of over-population was replaced by that of 'depopulation' and 'under-population'. This gave rise to the idea of the *Optimum Theory of Population*.

This theory tells us that at any given time or under any given particular conditions, other things being equal, there is what may be called a point of maximum returns attained when the population is so exactly fitted to the circumstances that returns would be less if it were either less or more than it. This population has been called the optimum population. The optimum varies from time to time as conditions determining population change.

13.3.2 Theory of Demographic Transition

More recently, Theory of Demographic Transition, as formulated by Frank Notestein, based upon the actual experience of the developing countries, has come to be widely discussed. The theory explains the growth of population through three different stages of economic development. Over time, it follows in the shape of an inverted U, as shown in Fig. 13.1.

The first stage relates to the most backward stage a country. It is primarily applicable to an agrarian economy with no sign of industrial development. Birth rate and death rate are high in this stage. The birth rate is high as a consequence of widespread illiteracy, early marriages, absence of knowledge of family planning methods, and above all the conventional belief about the big size of a family: (The highest birth rates ever recorded in modern times are among the Hutterite religious sect, many members of which live in Canada. A religious duty to bear children has led the Hutterites to an average of 11 children per woman, 400 births, 1000 women per year in the age group 25 to 29, and a crude birth rate of the order of 85 per 1000.)

Every addition to the family is treated as an asset, because children start working at an early age. They are also the traditional source of security in the old age of parents. Social and economic factors combined together to raise the birth rate. The death rate is also high during this stage on account of poverty, poor diet primitive sanitation and absence of medical facilities. Epidemics take a heavy toll of human life. Many people die for want of food, shelter and clothing. High birth rate and death rates keep the growth of population either stagnant or very slow.

The second stage relates to a developing economy when resources are utilised and industrial development also sets in. The birth rate continues to be high because social customs do not change overnight. Mass illiteracy still exists and the people are not rich enough to practise family planning measures. On the other hand, the *death rate falls considerably* on account of spread of health technology that brings in improved medical and health facilities, fall in infant mortality rate and assured food supply, a

better standard of living, and so on. A high birth rate matched with a sharp decline in the death rate causes a *rapid increase in population*. This stage is better known as the *stage of population explosion*.

The consequences of this stage are very dangerous. The population outpaces production. Whatever little development takes place in the country is eaten away by the excessive population. Sooner the country gets out of this stage, more favourable the conditions for economic growth would emerge. Countries like Indonesia, South Korea and Thailand did not stay for long in this stage, as is evident from signs of their moving quickly from the second to the third state. On the other hand, demographic transition in countries like India has been slow.

The third stage relates to a developed country. Economic development advances further. The character of the economy changes from the agrarian to the industrial status. The *birth rate falls sharply* on account of universal literacy, an extensive use of family planning devices, and a high standard of living. Instead of homes, women prefer jobs outside. The large size of a family obstructs free mobility, hence a general preference for a small family prevails. The *death rate also falls*, sometimes to unusually low levels because of the superfluity of young people in the population. Eventually, death rates rise somewhat as the age distribution becomes normal the *population of a country grows at a slow rate, if at all*.

In short, the theory of demographic transition views economic growth as a sufficient condition for a decline in fertility. Later versions of the theory emphasise the ways in which institutions affect choices through changing the constraints.

Check Your Progress 1

1) Explain how human resources promote economic development?

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2) Explain how human resources hinder the growth of an economy?

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3) Explain in brief the different stages of demographic transition.

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13.4 NATURE OF POPULATION PROBLEM IN DEVELOPING COUNTRIES

The present demographic situation of the developing countries differs significantly from the one faced by the present day developed economies when they passed through the second transition of demographic transition.

One, most of the developing countries are already densely populated. Moreover, their population is large in relation to resources, and no relief can be expected from such outlets as emigration, which had been available to England and to other countries of western Europe (for example, emigration to colonies outside Europe took care of nearly 20 per cent of the annual population growth).

Two, more serious is the fact that in many developing countries the rate of population growth is considerably higher than it ever was in Europe and other western countries largely as a result of sharp drop in death rates. Most of the developing countries have succeeded in bringing their death rates to a level comparable to those of the industrialised countries. It took Western Europe and North America more than a century to reduce their death rate gradually from 30 per thousand to a rate of 10 per thousand or slightly below. On the other hand, many a developing country including India have been able to reduce their death rate to below 10 per thousand. The birth rate, on the other hand, has declined scarcely, if at all, and in some cases it has even increased, as improved health conditions have reduced the frequency of pre-natal accidents. This is all due to the fact that whereas in Europe and North America, socio-economic development had preceded the discovery of modern health services, in the present-day developing countries the order of socio-economic development and growth of health technology has got reversed, the latter preceding the former.

Three, while the increase of population in the present day developed countries was spread out over a longer period and parallel economic expansion, the sudden and drastic population explosion in the developing countries coincides with the early stages of economic growth. It increased the difficulties of economic development. A World Bank study puts it as: "Developing Countries are like long-distance runners. In their race against time to eliminate poverty, rapid population growth is an additional burden, which regardless of their inherent strengths, slows them down."

In brief, it is to be observed that the model of demographic transition of the developed world cannot be transplanted in the modern developing countries where the germs of truth in the Malthusian doctrine are still important for understanding the population behaviour. Each of these countries, including India, has to draw its own policy to fight this menace. In order to make frame for such a policy it is necessary to understand the nature of other demographic features of developing countries and their relationship with economic development.

13.4.1 Other Demographic Characteristics of Developing Economies

So far we have concentrated on the '*quantity*' dimension of demographic profile of a developing economy, and have reached the conclusion that a large population need not necessarily be seen as an asset. Equally important from this angle is the '*quality*' dimension of population.

The quality of population manifests itself in varied demographic features as follows:

- i) **Life expectancy** : The mean expectation of life at birth is the best statistical measure of the health conditions and of the general level of mortality of a community. If the death rate is high and/or death occurs at an early age, life expectancy will be low; on the other hand, if the death rate is low and the death rate is low and (or) death occurs at an advanced age, life expectancy will be high.

An increase in life expectancy meets with an increase in economically active population.

- ii) **Infant mortality rate:** The law expectation of life at birth is also accounted for by the prevailing high infant mortality rate. The infant mortality rate is calculated as a ratio of the number of deaths coming the 1,000 born children before they reach their first birthday. The infant mortality rate is generally divided into two components: *neonatal* referring to deaths within one month after birth, and *post-neonatal* referring to deaths of infants after the first month. The distinction is important for two reasons: neonatal deaths are mainly the result of exogenous causes – the nature and quality of the environments in which the infants live. Since exogenous causes are easier to control through immediate policy interventions, post-neonatal deaths can be reduced faster than neonatal deaths. Other related measures are: (a) child mortality: measures the probability of dying between the first and fifth birthday, and (b) under-five mortality: measures the probability of dying between birth and exact age 5.

A higher measure of any these rates indicates backwardness and underdevelopment. The evidence suggests that improvements in child survival lead to a slowing of population growth, perhaps more dramatically than any other single intervention.

- iii) **Age composition:** The age and sex composition of population at any time is the result of past trends in fertility and mortality. The changing population dynamics could be a growth catalyst. The working population constitutes those in the age group 15-59, as in a modern society children (0-14 age group) and old people (60+age group) are normally not expected to participate in productive activity (although in egalitarian societies, economic compulsions often force the poor people in these age groups to perform some work or the other to earn their subsistence. Dependency ration, hence is:

$$\frac{\text{Total Population} - \text{Population in Working age group}}{\text{Total Population}}$$

When the share of the working population in the total population of a country rises rapidly, and grows at a faster rate than the total population, then greater output is generated. Not only that, these working young save more than the old, which means there is a lot of money for investment. This speeds up growth even more.

It may be worth nothing here that the East Asia's so-called economic miracle occurred in part because demographic transition in the region resulted in its working-age population growing at a much faster rate than its dependent population during 1965-90.

- iv) **Sex Composition:** Sex ratio – crucial to any analysis of social well-being – gives the ratio of women to men in the population and reflects (among other things) the relative chances of survival of women *vis-a-vis* men. In many developing countries, including India, sex ratio has been declining. This declining trend could be accounted for by the following factors:
- A progressive undercount of women compared to men in different censuses.
 - An increased discrimination of females (including infanticides) in providing the minimum nutrition, access to health and other amenities.
 - Increase in the proportion of male selective migrants from other countries.
 - Reduction in foetal wastage resulting in a decline in female male ratio at birth.
 - Female selective termination of pregnancy.

In future, as the mortality at child birth falls and the general status of women especially in the rural society improves, there should be a perceptible rise in sex ratio. On the contrary, if some forms of reduction of the family size to a uniform two children are brought about, it is bound to further imbalance the sex ratio – through selective abortion, female infanticide, neglect and even discarding of girl child.

- v) **Literacy and Levels of Development:** Another significant indicator of the quality of population is the level of literacy in the country. A number of empirical studies have demonstrated a positive relationship between education and the level of economic development. To quote the World Bank, “*Developing countries with high literacy rates have tended to grow faster, even after allowances are made for differences in incomes and physical investment, and they have had higher physical investment rates.*” That improvement in literacy contributes substantially to development is borne out by the high degree of correlation of literacy rates with other development indicators. The female literacy rate at age 15 and over is quite positively correlated with percentage of female workers in modern occupations age at marriage, and contraceptive use. It is strong and negatively correlated with infant mortality and fertility. It is in this backdrop that a study of the rate of literacy and levels of education acquires significance.
- vi) **Rural-Urban Distribution:** A final indicator of the quality of population is rural-urban population. A predominantly rural population indicates that a larger part of the labour force in the economy is engaged in low-productivity agriculture. The GDP, and as a result the per capita income, would tend to be low. On the other hand, an increasing share of the urban population reflects the on-going industrialisation of the economy, and the accompanying migration of labour force from low-productivity activities to relatively higher-productivity activities, which -augurs well for the future growth of the economy.

Check Your Progress 2

- 1) How is the demographic situation in developing countries different presently than in the past?

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- 2) Examine in brief the relationship between age-composition of population of a country and its economic growth.

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- 3) Examine the relationship between level of literacy and level of economic development in a country.

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13.5 POPULATION, POVERTY AND ENVIRONMENT

Having examined the demographic characteristics of developing countries and the nature of population problem in these countries, we need to examine a little more closely the relationship between population, poverty and environment.

13.5.1 Population and Poverty

The prevailing thought attributes poverty at the macro level (national level) to the population explosion and poverty line at the micro level (individual level) to the high fertility levels among the poor. Several times in the past, it has been demonstrated that this is an untenable view of the population-poverty relationship. The neo-Malthusian approach to the analysis of poverty is too narrow and restrictive because it does not go beyond the number game. Throughout the history, whatever be the population size, the underprivileged have always remained poor: slaves during slavery, serfs under feudalism and as landless labourers, small farmers, tribal people, casual labourers, artisans and the slum dwellers under the present-day capitalistic system.

Nevertheless, the incidence of pregnancy and the number of children born in a poor household is generally larger. This is explained by a number of factors. Poverty is attended by a number of other evils like poor diet, illiteracy, ill-health, etc. These are all indicative of low standards of living. For a country where a large proportion of population lives below the poverty line, living means bare subsistence, a few additional children hardly make a difference to that subsistence living; the standard of living is a mere myth. On the contrary, children at a very young age start helping their parents in work, and, therefore, prove to be asset for the family.

13.5.2 Population and Environment

Population growth has a negative effect on environment. The population growth makes increasing demand on nature: land, water, air, etc. Consequently, the natural disasters of flood or drought become more damaging as population grows; the growth in numbers itself contributes to environmental damage, especially through reduction of soil cover and consequent flooding. And the problems of feeding the growing population become immense: an increasing expenditure of scarce resources not only in investment, but in administration and research, is required simply to maintain levels of food availability. An when either fails, the costs are enormous in terms of relief expenditure at home and food purchases abroad. The economy not only has to run in order to stand still – it has to run faster and faster.

In view of these, economists have evolved the concept of *sustainable development*. Sustainable development, as a development, paradigm, aims at ushering in a 'sustainable society' or 'sustainable future' the hallmark of which is a perfect balance and harmony in man-man and man-nature relationships that provide for ecological

security, economic efficiency and social equity. Sustainable development as a goal rejects policies and practices that support living standards by depleting the productive base, including natural resources.

13.6 NEED FOR A POPULATION POLICY IN A DEVELOPING ECONOMY

A review of the population problem in densely-populated developing countries like India would serve to bring out the necessity of a direct attack on the problem that should aim at a reduction in the birth rate. In the developed world, this result was achieved gradually and spontaneously, after a slow process of change in sociological and cultural patterns resulting from economic development and industrialisation. Based on the experience of the west, *economic development and industrialisation are quite often stressed as the best contraceptives.*

It is believed that an increase in per capita income would lead to a fall in fertility. It is felt that the inception of economic development brings about urbanisation accompanied by a general change in the outlook towards life. Children become more urban setting. With the development process gathering momentum, literacy and social awareness spread popularising the concept of a small family.

An important argument in support of the inter-linkage between economic development and fertility reduction has been provided by the demand theory developed initially by G.S.Becker and carried forward by other economists of the household economics, as it is popularly called the demand theory has heavily emphasised various socio-economic indicators of development as factors responsible for bringing changes in fertility behaviour at the micro level. The major socio-economic variables identified in the demand theory are the level of family income and the opportunity cost of the mother's time. An increase in the level of family income, the demand theory postulates, reduces fertility demand, as parents with increasing income aspire to improve the quality of investment on each existing child. An increase in the opportunity cost of the mother's time and say by increases in the labour force participation by married women raises the cost of the child care as the mothers have to forego a larger sum to bring up each additional child. This in turn reduces the demand for a large number of children. Extending this argument the demand theorists have explained the fertility transition in the west as a result of the falling demand for children.

Therefore, a case has been sought to be made in favour of the thesis, known as the '*redistribution position*' that states that "population problem is basically a problem of economic development and social transformation and not just of controlling numbers". This explanation is based on the economic decision-making model for fertility control as formulated by Leibenstein. The model is based on the analytical concept of children as durable consumer goods. Accordingly, it is assumed that the development of the country releases certain economic forces which diminish the utility of children of higher birth order for their children. In the elaboration of his model, Leibenstein has identified six types of utilities, as follows, which parents may derive from children:

- i) consumption utility
- ii) work-economic utility
- iii) economic risk-reduction utility
- iv) old age security
- v) long-run family status maintenance
- vi) contribution to the extended family

These utility factors change in a developing world and it is argued that the higher the socio-economic status of the parents, the higher is the marginal cost for having additional children, thus accounting for the fact that in general the higher the socio-economic status of the parents, the lower is the fertility.

This thesis is to be contrasted with the neo-Malthusian 'Incremental Theory' that stated that rapid population rise hinders economic growth.

However, this type of reasoning fails to take note of the fundamental differences that exist between densely populated countries like India presently and the western countries when they were at the comparable level of development towards the end of the last century. Some of these differences have already been stated earlier in the unit.

- None of the western countries was as densely populated as the present day developing countries are.
- In none of the western countries, mortality decline was as sharp and rapid as has been witnessed in the present day developing countries.
- Most of the western countries had outlets in the form of emigration; present day developing countries do not have.
- Most of the western countries had free access to large markets and easy availability of agricultural and mineral raw materials during the initial stages of their development, the present day developing countries do not have any such access.

Once these fundamental differences are understood, the fallacy of equating countries like India with other western countries becomes very clear. In countries like India a similar process of slow adjustment appears impossible. In any case, it would not meet the urgent need for a drastic need.

In short, countries like India need not place themselves in a egg-first-or-chicken-first syndrome, should development precede population control, or should population control precede development. From our point of view, population control is a necessary condition for accelerating the pace of economic development, and hence the population policies appear to be a legitimate object of government intervention.

Similarly, we mean also to refer to another school of thought, consisting of a small but influential minority of intellectuals, that believes that the population problem in developing countries is largely a result of the structural problems of society, i.e., the unequal distribution of assets and income, persistent poverty and the tendency of the elite to hold on to the advantages or privileges enjoyed by them. It is argued that every mouth is born with a pair of hands, and human labour is the ultimate source of all capital. The growth of population should be seen in relation to the development of productive forces. If the structural problems are tackled and socio-economy relations are altered, the economy would be managed better, the productive forces would develop, and the growing population would prove an asset rather a liability. The contention is valid up to a point but harsh reality of population growth and its heavy burden on future generation simply cannot be ignored. Therefore, it is necessary that a proper policy is framed and implemented so that a positive connection between population and development is established.

13.6.1 Components of Population Policy

A meaningful population policy should emphasise the following:

- 1) Increase the rate of employment but such figure as will do away with unemployment among the population of working age; i.e.; the goal should be to achieve full employment.
- 2) Empowerment of women.

3) Controlling the growth of population.

1) **Objective of Full Employment**

Full employment has been accepted as the desired goal of economic development in almost all the countries. The difficulties in the way of securing full employment are too well-known to merit specific mention, but we could take up some of the major constraints. For securing full employment, only is there a need for more capital and an increase in domestic purchasing power, but also labour-intensive technology for bringing about the desired increase in employment. It will also mean creating additional employment to the workers living in villages so that migration to urban areas will be lessened through rural industrialisations and thus save the country from the enormous cost of financing the needs of additional urban centres. In any case, it will take some time, may be a couple of decades, before we can achieve full employment in working age.

2) **Empowerment of Women**

Empowerment of women implies giving women power over their economic, social and reproductive choices to raise their status, promote development and reduce fertility. For this purpose, the first step is to close the educational gender gap. This will have the following positive effects:

- The rate of return on women's education is higher than on men's in most developing countries.
- Increasing women's education not only increases their productivity on the farm and in the factory but also results in greater labour force participation, late marriage, lower fertility and greatly improved child health and nutrition.
- Improved child health and nutrition and more educated mothers lead to multiplier effects on the quality of a nation's human resources for many generations to come.
- The improvement in women's role and status can have an important impact on breaking the vicious circle of poverty and poor schooling.

Thus, women's empowerment can go a long way in securing sustainable economic and human development.

3) **Controlling the Growth of Population**

Population growth can be contained only by fertility reduction, popularly known as adoption of family planning. Family planning implies two things: (i) limiting the number of children to be born to a couple to one or two; (ii) determining the spacing of children. In other words, family planning means bearing a child by choice and not by change. Modern developments in health science have made it possible for couples to exercise this type of choice. The availability of contraceptives and other such facilities has made it easy to popularise family planning.

Check Your Progress 3

- 1) Examine the relationship between population growth and poverty.

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- 2) Examine the relationship between population and environment.

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- 3) Bring out the need for a suitable population policy in a developing country like India.

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13.7 LET US SUM UP

Population growth has a two-pronged relationship with economic growth; large population both stimulates growth and hinders growth. A large population becomes a liability in a situation when the complementary resources, especially adequate capital, and suitable technology, are not available. Most of the present day developed economies could face the problem of rising populations in the earlier phase of their economic development by accelerating the pace of growth. For most of them, large population proved invaluable assets. Therefore, a thesis got propounded that “economic development is the best contraceptive”. But this idea generally does not find favour in the present day developing economies. These economies need to control the rate of growth of population, just as they need to push up their rate of economic growth.

13.8 KEY WORDS

Growth Rate of Population: Ordinarily, the difference between the crude birth rate and the crude death rate, measured either annually or for a decade.

Crude Birth Rate: Number of births per 1000 population during a year

Crude Death Rate: Number of deaths per 1000 population during a year.

Life Expectancy: Number of years, on an average, a now-born child can hope to live.

Density of Population: Number of persons living per sq. km. of area

Infant Mortality Rate: Number of children dying before reaching five years of age per 1000 population during a year.

Age Composition: Distribution of population by 6 different age groups.

Sex Composition: The proportion of males and females in total population, more generally enumerated as number of females per 1000 males Literacy defined as ability to understand the 3 R's.

Urbanisation: Growing shift of labour force and areas of activity from countryside to towns and cities.

Human Capital Formation: Financial investment in raising the skills and abilities of people

Dependency Ratio: The ratio of population defined as dependent – those under 15 and over 60 – to the working age population.

13.9 SOME USEFUL BOOKS

Malthus, T.R. (1992). *An Essay on the Principle of Population*, Cambridge University Press, Cambridge.

Cassen, R.H. (1979). *Population, Economy, Society*, McMillan, Delhi.

13.10 ANSWERS/HINTS TO CHECK YOUR PROGRESS

Check Your Progress 1

- 1) See Sub-section 13.2.1
- 2) See Sub-section 13.2.2
- 3) See Sub-section 13.3.2

Check Your Progress 2

- 1) See Section 13.4
- 2) See Sub-section 13.4.1
- 3) See Sub-section 13.4.1

Check Your Progress 3

- 1) See Sub-section 13.5.1
- 2) See Sub-section 13.5.2
- 3) See Section 13.6

13.11 EXERCISES

- 1) Critically examine the two-way relationship between population growth and economic growth.
- 2) “Besides the number the quality of population is equally important.” Examine this statement.
- 3) “Economic development is the best contraceptive”. Do you agree or not with this statement. Explain fully.

UNIT 14 INSTITUTIONS AND ECONOMIC DEVELOPMENT

Structure

- 14.0 Objectives
- 14.1 Introduction
- 14.2 Market Failure
- 14.3 Government Failure
- 14.4 Institutions and Governance
- 14.5 Role of Social Norms and the Community in Economic Development
- 14.6 Inter-sectoral Complementarities, Coordination Failures and Historical Lock-ins
- 14.7 Let Us Sum Up
- 14.8 Key Words
- 14.9 Some Useful Books
- 14.10 Answers / Hints to Check Your Progress Exercises

14.0 OBJECTIVES

After going through the unit, you would be able to:

- Evaluate the roles of the State and the market in developing economies;
- Define market failure and state its characteristics;
- Describe the situation of government failure;
- Examine the impact of institutions and governance on economic development;
- Discuss how economic development is influenced by social norms and the community; and
- Explain the phenomena of coordination failures and historical lock-ins.

14.1 INTRODUCTION

This unit takes up for discussion some topics that are of crucial importance in understanding the working of economies of developing societies. We know that markets can play an important role in allocating resources efficiently and also in providing incentives for growth. But do they work always? Or are they sometimes, in certain circumstances, prone to failure? Why does the government need to intervene sometimes? All these questions are taken up for discussion in this unit.

The basic thrust of this unit is to present a discussion about the impact and influence of institutions on the process of development. Traditionally in microeconomics and macroeconomics analysis has been conducted as if in an institutions-free environment. But institutions matter. Two points are being suggested here. First there are more variables that have to be taken into account when analysing economic processes. There are even non-economic factors that impinge on economic process—political, social and cultural factors. The second assertion is that institutions vary across space and over time. Institutions are neither static nor uniform. In developing nations, social institutions and the community impinge on the economic processes a good deal. Hence any study of developing societies need to take this into account. The unit thus has a discussion on role of social norms and of the community on economic development. It also discusses the importance of governance in its impact on policy-making and economic transactions, and hence on development.

Sometimes it is observed, and not only in developing countries, that outcomes less look inefficient and sub-optimal not only emerge but also tend to persist. It is as

14.2 MARKET FAILURE

Adam Smith, in his classic work *An Inquiry into the Nature and Causes of the Wealth of Nations* published in 1776 argued that individual pursuing their private ends would, through competition, be led to promote the public interest as though led by an ‘invisible hand’. Ever since then, economists have widely agreed that competitive markets do lead to efficiency, but later on, economists realized that competitive markets promote efficiency if certain conditions are met, and there may be situations where the competitive market does not perform well or work perfectly.

The question is, what do we mean by efficiency, and what are these conditions that have to be fulfilled if the market is to promote efficiency? The basic answer is provided by what are called the two fundamental theorems of welfare economics.

The Fundamental Theorems of Welfare Economics

The first fundamental theorem says that under certain conditions, competitive markets lead to an efficient allocation of resources. Efficiency here means the allocation is Pareto-efficient and the situation is one of Pareto optimality. Pareto optimality means a situation where it is impossible to make someone better off without at the same time making someone else worse off. It may be possible to make someone better off. But at the same time, someone else will necessarily end up being worse off. If there is a situation where someone can be made better off but no one else ends up being worse off, the economy or the society in question has not yet reached a situation of Pareto optimality. When economists speak of efficiency they usually mean Pareto-optimal situations. When an economy has reached a Pareto optimal state, it reaches a point on its utility possibility frontier and does not lie below the utility possibility frontier.

The second fundamental theorem states that given the proper initial distribution of resources, a decentralised competitive economy will attain some point on its utility possibility curve. Of course, any point on the utility possibility curve can be attained but the important thing is that it will be a point on the frontier and not below it. Of course, Pareto optimality says nothing about equity or the distribution of resources. Even under Pareto optimality there might be gross inequality. Even if the resulting income distribution is not acceptable, we need not abandon the competitive market mechanism. We merely have to redistribute the initial wealth. At some specific distribution of the initial wealth, there will be the decentralised market mechanism at work at will help to attain the desired outcome.

The fundamental theorems of welfare economics make a powerful case for the market mechanism. What it says is that if decision –making is decentralised, that is, individual decision makers independently make their own decisions based on their own self interest and there is competition at work, we do not need any centralised resource allocation mechanism like a planning agency. The second fundamental theorem gives a modern touch to Adam Smith’s principle of the invisible hand. The reason the second theorem works, that is, the reason a decentralised competitive system ensures Pareto optimality is that individuals, in making decisions to make optimum gains, equate their marginal benefit to the marginal cost. You have come across decision-making using marginal concepts in your microeconomics course. Of course, the fundamental theorems of welfare economics talks about a situation where there is no change, things are static, and firms are small and cannot influence prices. It gives quite a narrow perspective of competition. Sometimes, people have made a case for the market mechanism with quite a different perspective of the competitive system in mind. When you come to Schumpeter’s theory in block 5 of this course, you will be better acquainted with these themes.

We have seen that the fundamental theorems of welfare economics assert that if certain conditions are met, the economy will be Pareto-optimal. There are circumstances or situations where the market is not Pareto-optimal or Pareto efficient. These situations are called situations of market failure and economists have

suggested that these situations provide a justification for government intervention and activities. What are these situations? The main ones are:

Markets that are not competitive

Pareto optimality is attained only under situations of perfect competition. In some industries there may be a few large firms dominating the market. These situations may not be so bad if there are many potential entrants waiting to enter the market and provide competition. Pareto optimality will be much harder to attain if there are barriers to entry. If entry into a market were costless and easy, even the existing firms might behave in a competitive manner. Sometimes barriers to entry are created through government regulation, like giving a firm or at best a few firms some contract, and sometimes firms use the possibility of reaping scale economies, that is, increasing returns to scale to bar entry. Increasing returns to scale increasing returns to scale implies average cost of production declines with the scale of output. The government does sometimes regulate monopolies.

The main reason monopolies are viewed with suspicion is that a monopolist will generally restrict output to raise prices with a view to making profits. A monopolist, just like a firm under perfect competition, produces till the point where his marginal revenue equals his marginal cost. Under monopoly however, the prices are higher and equilibrium output is lower than under competition. Moreover, under monopoly, the monopolist takes off part of the consumer surplus. But there is a certain portion that accrues neither to seller nor to the buyers. This is called the deadweight loss under monopoly. It is for these reasons that markets with monopolies do not attain Pareto optimality and the situation is one of market failure.

Public Goods

There are goods that have two specific characteristics: firstly it is difficult to exclude anyone from consuming these goods. Light going out to ships from a lighthouse, or rather, the lighthouse itself is a classic example of this kind of a good in economics. The other characteristic is that there is no rivalry in the consumption of a good. Consumption by one person does not diminish the amount to be consumed by any one else. The marginal cost to the additional individual enjoying the good is zero. A classic example is national Defence. An example of a good showing rivalry is a shirt.

These types of goods displaying rivalry and exclusion-ability are called pure public goods. The market will not supply, or will under-supply public goods, that is, supply in insufficient quantities.

Externalities

These are situations where the actions of one individual or firm affect other individuals or firms. There may be situations where one firm or individual imposes costs on others, that is, imposes social costs, but does not adequately compensate for these. Alternatively, an individual or firm may provide benefits to others but does not reap the rewards. All these are situation of externalities. A recent example is air pollution created by factories and vehicles.

In situations of externalities, allocation by market mechanism may not be very efficient since there is a divergence between private and social costs, and between private and social benefits. Those who impose costs on others but do not compensate others might undertake too much of these activities, while those who do not get to reap the full benefits of their actions might produce too little of it. The government often responds in such situations by stepping in either through regulation or by using the price system to impose penalties or give rewards.

Incomplete Markets

There are situations where markets fail to provide a good or service, even though the cost of providing it is not more than what consumers are willing to pay for it. We call this a situation of incomplete markets. This sort of situation is often encountered in financial markets, particularly in markets for credit and insurance. There is the related case of absence of complementary markets missing in some cases, or coordination failures. All these are situations of market failure. Many people

advocate a strong government intervention in such situations. You will study more about incomplete markets, particularly in the context of rural economies in developing countries, in the next unit.

Information Failures

Sometimes there is the presence of imperfect information in markets, and this provides a rationale for government intervention. In these situations the fear is that in the absence of government intervention, the market will provide too little information, so that some parties to a transaction can get too much benefit. Collection and obtaining of information ought not to be too costly.

There are other roles that have been put forward as legitimate for the State to intervene and act in the economy, even in a market economy. The first of these is to combat inflation, unemployment, and situations of disequilibria in some markets, that is, to smooth out the ill effects of business cycles. Macroeconomic stabilisation policy has long been an activity of the state, even in developed nations, particularly since the Great Depression of the 1930s. You can read about these policies in your macroeconomics course.

Two other important areas for the government to intervene in market economies have been: to improve the income distribution which might emerge as an outcome of the working of the market economy; secondly to compel people to consume certain goods that the state thinks is in the best of the consumers themselves, or goods which consumers otherwise does not choose to consume even though they know it is in their own best interests. These goods are called merit goods. Private firms may provide these but also because the government has compelled the people to consume these. Examples of such merit goods are helmets for scooter riders or seat belts in cars. Some have viewed this action by the government as stemming from the government purporting to decide on behalf of consumers as a philosophy of paternalism. Critics feel a section of society is imposing its will on others.

One basic role of the government that everybody agrees is necessary is the government providing the legal framework and protecting property rights. This, it is felt will provide the necessary incentives and assurance to private markets to function smoothly and work efficiently.

14.3 GOVERNMENT FAILURE

In the previous section, we saw there are certain situations where the government intervenes in the market to correct market failures. Also, government might itself engage in production and supply of certain goods. Other than this, the government provides administration. In certain societies the government undertakes economic planning. The government undertakes monetary and fiscal policy and incurs expenditures, generates revenues, provides subsidies and transfers, and imposes taxes. Thus, the state performs many functions. But if we limit ourselves to government intervention to correct the malfunctioning of the market, we find that there are situations where the government may not in practice be able to realise its intentions. Very often political factors come into play and the intention of the government gets lost in rhetoric.

This failure of the government to realise its stated objectives is broadly known as government failure. This concept has been put forward as a counter to those who point out the possibility of market failure. Roughly, the idea is that merely because there is market failure does not mean that the government can step in and make it better. There may be government failure, which might make the situation worse than what it was to begin with. Thus, government failure can mean either that the government fails to realise its objectives, or makes the wrong decisions. There are several reasons that have been suggested about why the government fails to realise its objectives.

The first reason is that the government has limited information. One of the advantages of the market system is that it seeks and provides information in a costless manner, unless there are market failures. No state can match the market

when it comes to processing information. Moreover, the state sometimes cannot foresee future events and make correct expectations.

The second reason put forward for government failure is that the government has limited control over the private sector, over private agents. The government may make decisions that require the citizens to do or not do certain things but the administrative and enforcement costs may be very high. For instance, in cities, the government may lay down rules about the size of extension that can be made to dwellings but these may be flouted with impunity. Also, considerations of democratic politics constrain government actions.

The third reason why there may be government failure is that the government has limited control over the bureaucracy. Usually the legislature creates the Act and law, and the executive may conceive the decisions and actions, but it is the bureaucracy that has to implement these. The executive and elected people's representatives may have limited control over the bureaucracy, as there may be situations of asymmetric information here, and the issue of moral hazard comes in with the government as the principal and the bureaucracy as the agent. You are reading about these points in detail in this programme in the course on microeconomics in the unit on information economics. Well, the relation between the government and the bureaucracy is one illustration of information economics.

Another reason often put forward for government failure is that there are constraints imposed by the political process. Actions and decisions of the government affect all people but in modern democracies these decisions are made by a small group of people. We have touched upon this point while discussing the second type of reason above. The party or coalition that emerged victorious in the previous election forms the government, and they have the next election to contest.

Why do we observe government failure in developing nations? Many years ago, the Nobel Prize winning economist Gunnar Myrdal had spoken of a 'soft state' to describe the state in developing nations. According to Myrdal, the state is not able to effectively implement its stated policy objectives. There can be several reasons for such widespread phenomenon of this inability to meet stated policy objectives. First, government functionaries, and politicians, may in many cases display a pursuit of self-interest. While pursuit of self-interest is much extolled in economics as we have seen in the previous section, in this case the self-interest of these individuals are add odds with the objectives of the organisation, or the bureau or the executive. This pursuit of self-interest not only leads to venality and corruption, it also leads to sub-optimal results and inefficiency from the government's as well as from society's point of view.

Secondly, as we mentioned earlier, electoral pressures sometimes compel governments to take populist measures and undertake policies that do not lead to outcomes that promote efficiency. Naturally this type of situation is likely to take place more on the eve of elections. This may be true of national governments as well as state-level governments. Related to this is a third reason, which is that the government often works with short-run perspective in mind. This is especially true about solutions that the government is trying to find about problems. Trying to find short-term solutions does not bring about structural changes in the economy. This leaves many problems un-addressed.

Fourthly, government actions that are prompted by some specific policy objective or social goal sometimes lead to disincentive effects so that again, the optimal solution or outcome does not result. For example, the government may be driven by the desire to realise some social objectives but adopts a taxation policy that creates distortions in the economy and lowers revenue.

Fifthly, as we had already mentioned the government lacks the total information required to solve entirely the coordination problem. The information structure is imperfect. The best solution for this is to decentralise government as much as possible, and make the decision-making process participative. We shall elaborate on this in the next section when we discuss governance.

Finally, there is a reason that is very significant as it exists in democratic societies but is constantly undermining the ideals of democracy. This is that certain special interest groups or pressure groups manage to capture the policymaking process and get policies made that are to their advantage. Special interest political groups like chambers of commerce, rich farmers' groups, professionals always try to influence the making of policies that will suit them. Even when there are regulatory activities of the government to regulate the prices and activities of monopolies, some business groups often take actions that influence the regulatory process itself so that they actually benefit from the regulatory processes as compared to other smaller firms. This is sometimes described in the literature as 'regulatory capture'.

Check Your Progress 1

1) Explain the concept of market failure. Discuss its causes.

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2) Describe the possible reasons for government failure.

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14.4 INSTITUTIONS AND GOVERNANCE

In the previous two sections we looked at how the markets sometimes fail to function efficiently, and how, as the government tries to correct these market failures, the possibility exists that government actually makes things worse. These situations of government and market failure suggest to us that it is important to consider the institutional framework under which the markets function as also the structure of governance, the myriad of decisions and actions by the government and policymaking institutions which will provide the correct information and incentives to private agents in the economy to carry out optimal decisions.

In recent times institutional economics has assumed considerable importance in the analysis of developing nations. Institutions were important topics of analysis earlier as well, as exemplified by the works of economists like Thorstein Veblen, but by and large neo-classical economics was conducted, assuming, in effect, an institution-free environment. Recently, the analysis of exchange using tools of microeconomics has been sought to be supplemented by institutional analysis. Another reason for institutions assuming importance is the interest in work on economic growth. We have studied several theories of growth. We saw recently there has emerged a group of theories that see growth as determined by processes that are endogenous. There are differences in factors and endowments among nations, and this is supposed to explain the differences in economic growth of nations. Some economists have suggested that the factors which are supposed to cause economic growth, which are endogenous, are themselves not the causes of, or explanations of growth. They are actually the characteristics or features of growth. The main reason for differences in growth performance is differences in the structure of institutions in various countries. Institutions and differences in them can account for large differences in the performance of countries.

About traditional private goods that are excludable and rival, what the best institutional arrangement is happens to be well known: there should be the presence

of strong property rights and anonymous markets. That's all you need. However, non-rival goods can create a problem because it is not clearly known what the right institutions are, and hence there is a lot of scope for innovation in institutional set-up. We need to know in more detailed form and in greater nuances, what the correct institutional set-up should be for a particular type of non-rival good. The optimal design of institutions is an unresolved problem.

What are institutions? Douglass North, a Nobel Prize winner in economics defines institutions by referring to them, as "the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction." He suggests that institutions shape the constraints in interactions among people. These interactions may be economic, social or political. Economic institutions such as property rights and the degree of perfection of markets influence the structure of economic incentives in society. Economic institutions also determine how efficiently allocations will be allocated in society. Thus it is important to realise that not only are institutions important but also that they are endogenous.

In the early history of economic thought, there have been theories of development that have sought to analyse institutions by considering them endogenously. In the next block, you will study about the theories of development of the classical economists. Among them Marx, for instance, gave a broad ranging theory of development where institutions affect each other. Forces of production, that is, technology, are the driving force behind institutions. Forces of production affect the production relations. These two constitute the mode of production. As the mode of production that is, the economic system changes, it affects the entire superstructure of political, legal and social relations.

In the microeconomics tradition of Walrasian economics, analysis was often conducted as though in an institution-free environment, as we mentioned earlier. Recently there have been two strands of economic analysis that has sought to extend the Walrasian paradigm to incorporate institution. One strand looks at changes in property rights and transaction costs having a great impact on economic development. This view is exemplified by the works of Ronald Coase and Douglass North. The other strand has sought to use the recent developments in information economics, like asymmetric information, imperfect information, moral hazard, adverse selection, signalling and screening, to understand how institutions affect development. They see institutions as filling in gaps in the economy created by missing and incomplete markets, presence of risk, and asymmetry of information. They have used this, for instance, to model agrarian institutions, for instance on these lines. This is seen in works of economists like George Akerlof and Joseph Stiglitz. Interestingly, all four economists have won the Nobel Prize.

The transaction costs school contends that as transaction costs change, institutions emerge to minimise these transaction costs. This is the basis of development. Transaction costs include costs of negotiation, monitoring, coordination, and enforcement of contracts. When transaction costs are high, allocation of property rights becomes crucial. Contracts come to be determined by property relations when transaction costs are high. In the development process there may emerge a trade-off between economies of scale and transaction costs. In simple face to face interaction transaction costs may be low but production costs are high because specialisation and division of labour is limited. The transactions cost school also believes that changes in relative prices cause institutional changes. The information economics school cast their theories in more rigorous terms and explicitly bring in notions of equilibrium..

It is important to understand why and how a certain institution emerges, and what purpose it may be serving. Even an institution that appears to be negative may be serving some purpose. It is important to realise this to explain its persistence. The institution may not be optimal, indeed, may be dysfunctional and may still persist. It is necessary to observe if there are regularities in the evolution of institutions, as this gives rise to conventions.

- 1) What are institutions? How do they influence economic development?

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- 2) Briefly discuss the two broad views on the role of institutions and their impact.

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14.5 ROLE OF SOCIAL NORMS AND THE COMMUNITY IN ECONOMIC DEVELOPMENT

In traditional economic theory, particularly in standard microeconomic theory, agents maximise some decision function subject to some constraint. For example, consumers maximise some utility function subject to a budget constraint. When we study developing economies, we find that institutions, social norms and customs also play a role. Hence norms and customs create additional constraints. These norms may promote development or hinder it. Norms may remain static and unchanging or may evolve over time.

We have seen that in the real world, there may be widespread imperfection of information, which leads to pervasive market and state failure. It is not always easy to correct market or government failure. It might seem that these failures can be corrected through legal procedures but these can sometimes be very costly both for the individual as well as society. Moreover, if there is moral hazard even in the judicial and administrative system, then government failure only goes on to exacerbate market failure.

The incidence of moral hazard would be smaller among economic agents who interact with each other in a personal manner and interact repeatedly. Moreover, by interacting repeatedly they come to predict each other's behaviour, and know that others can also predict their behaviour as well. This creates the basis for developing mutual trust. A community can be defined as a group of people who interact on a personal basis and are bound together by mutual trust. Communities, provide a principle of organisation that has the potential to correct market and government failures and to provide an impetus to development. The community does not always solve problems about the division of labour, but it guides members to cooperate voluntarily based upon close personal ties and mutual trust. Thus, the market is based on competition, the state on coercion and command, while community relations are based on cooperation. When organisations are created based on the community these are called civil society organisations, although it is a moot point whether the market is outside the civil society organisation. Sometimes the community and the state combine for economic development.

Inability to form long term cooperative relationships based on mutual trust can lead to considerable loss because of absence of trust and lack of communications. Building of such relationships leads to the lowering of transaction costs and development of network relationships. This sum total of network relationships that a person has with other members of the community has been called by writers like

James Coleman and Robert Putnam as social capital. This social capital acts as a local public good whose benefit is limited to a particular group of interacting individuals. Supply of local public good is the comparative advantage that the community has over the state and the market. Mutual trust created by long-term repeated interactions could sometimes be strengthened by forming triadic interactions and inter-linked transactions. You will study more about these in the next unit. Once mutual trust-based interactions become widespread in the community, these can become positive norms in society and can lead to considerable lowering of transaction costs. If transaction costs through triadic interlinked transaction does not lower transaction costs, it may be necessary to form organisations where relations are structured in a hierarchical manner such as a firm. In societies where mutual trust-based relations do not form easily, the government needs to step in to correct for the undersupply of social capital.

Where common property resources are involved, community based relationships assume importance so that the tragedy of the commons type of situation does not arise. This means that when there are resources that are the common property of the community, like for instance a grazing patch of land for the sheep of the villages, an individual shepherd has an incentive to overgraze the land with his sheep since he can 'free-ride' because the land belongs to the community and he does not have to bear the entire cost. This becomes true of all the farmers with the result that the grass of the grazing land gets depleted faster than it otherwise would have been. This type of situation arises often.

14.6 INTERSECTORAL COMPLEMENTARITIES, COORDINATION FAILURES AND HISTORICAL LOCK-INS

We have studied in earlier units that one of the issues in economics of development is whether nations converge to a common growth rates. Statements about convergence tend to include propositions about parameters like investment and saving and their relationship with growth. We saw in the previous section that institutions too have a profound impact on the development process. We can now ask, is history itself important? What if a country's history itself, coupled with people's expectations about the future, determines not only the institutional framework but also the parameters of the growth process like saving and investment? We are looking at the persistence of certain patterns over long periods and asking why is such persistence present? People often speak of 'historical forces'. The question is, how do we take these into account? One view is that the course of economic development is determined to a considerable degree on the earlier choices that were made, the basic *path* that was chosen. The development process is path dependent. Path Dependence theory postulates that when we consider the performance of an economy, its position at a certain point of time depends on the whole sequence of events. The whole path is important. We need to look at the entire history of the process.

Brian Arthur is an economist who put forward the suggestion that certain inferior outcomes may have got locked-in by historical events. You have studied in the microeconomics course that equilibrium is usually the result of economic agents choosing actions and making decisions while acting rationally by maximizing some objective function. Such equilibria are optimal. However, in reality some inferior outcomes can sometimes emerge and, moreover, may persist. It is these situations that path dependence theory addresses. The question it asks is Why do these situations arise, and how? Moreover, why do they sometimes tend to continue? Why do rational decision-makers who are supposed to make optimal choices not take corrective measures? The interesting thing is that these inferior outcomes emerge even when superior alternatives exist and are available.

One way how this works is through complementarities and network externalities. We shall explain these concepts with some examples from technology. The common typing keyboard layout in typewriters and computers usually have the letters Q, W, E, R, T, Y.... on the top row and this is called a QWERTY-type keyboard. Now, the

earliest typewriters were mechanical gadgets where, when a key was struck, a lever with the imprint of the letter would rise and strike the typewriter ribbon that, because it contained the fluid or the ink, the letter would form on the page. If two or three keys were hit with quick succession the lever would jam. The QWERTY keyboard was designed in such a way as to minimise the possibility of such jamming by placing the keys that were likely to be struck in quick succession in terms of spelling of words of the English language were placed far apart. Thus the QWERTY keyboard was designed to slow down speed. An alternative keyboard design introduced in 1932 was realised to be better at promoting speed when it was found that typists trained in the Dvorak system were regularly beating typists trained in the QWERTY system at speed typing tests. The question is, why do we then find the inefficient QWERTY-type layout in most keyboards? The answer is that the QWERTY layout had a historical advantage of emerging first. Given that firms and organisations hired typists coming out of typing schools. Given that these typists were already trained in QWERTY-type keyboard, any *individual* firm would have found it very costly to invest in retraining its typists on the Dvorak system. There is now a clear divergence between individual costs and social gains. This occurs in this case because there are complementarities and network externalities. Externalities take the special form of network externalities because of the complementarities. Let us explain further what network externalities mean. You have already read in the section of market failure what externalities are. Network externalities mean that the cost or benefit of adopting a technology or product depends on how many people already adopted the same technology or product. Say you plan to buy a mobile phone, because among other uses, you think that sending and receiving SMS messages would be very useful. But if only two or three other people whom you know have a mobile, this feature is not going to be too useful. Surely, the more of your friends and acquaintances already have a mobile, the more useful it would be to you. This is an example of network externalities. This is very important in Information and Communication Technology (ICT) like e-mail.

So, to come back to the QWERTY example, we find that complementarities and network externalities create a situation where a suboptimal choice is made and it tends to persist. The important thing to realise is that if we were to look at the average cost (AC) curves (recall from your microeconomics course what these look like) of the Dvorak system and the QWERTY system, we will find that the Dvorak system, because it is more efficient, will have its curve downward sloping, and everywhere below the AC curve of the QWERTY system, which would of course be downward sloping because of scale economies. But for an individual firm which wants to make a switch from QWERTY to Dvorak, the relevant costs (in the two curves) to be compared are at different points corresponding to the horizontal axis, which measures the number of units (typists trained). On the QWERTY curve, the point is far too much to the right since QWERTY has been around for a long time and many typists with QWERTY type training are there. To switch to Dvorak system, we have to consider a point close to the origin on the horizontal axis, because it will be first typist for the individual firm. So this point, on the Dvorak curve will be too much to the left and be of higher average cost than the QWERTY point.

Although some economists and historians of technology do not agree that the QWERTY system is inefficient as compared to the Dvorak system, the basic idea should be clear. There are other such examples. In the 1980s, the format for videotapes chosen was the VHS although the Betamax system was demonstrably superior. In computer software, although other operating systems may be available, and may even be superior or cheaper or both, because of complementarities and network externalities, Windows operating system has become the standard. Similarly in the case of microprocessors, although other chips like AMD and RISC chips are available, Intel chips have become the industry standard.

The upshot of the discussion is that we find that because of complementarities and network externalities, there may be multiple equilibria. Which equilibrium gets chosen—and it may be the inferior one, depends on the path chosen by history. When complementarities are present, there may occur historical lock-ins.

Recall the idea of the ‘low level equilibrium trap’ that you studied in unit 11. the same idea can be understood in terms of widespread coordination failure where large-scale investment does not take place because other complementary investments are not forthcoming. Because of coordination failure, each investment is not made because other complementary investments are not made. Investments would be made if each investor expects others to invest. Coordination then depends on the expectations of investors. The problem of coordination can be solved to a great extent if linkages can be created among various sectors of such a developing economy. Rosenstein-Rodan used this kind of an idea to formulate his theory of the Big Push.

Check Your Progress 3

- 1) Discuss the role of norms and the social community in economic development.
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- 2) Explain the concepts of path dependence and historical lock-ins.
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14.7 LET US SUM UP

This unit discussed issues of great importance in the trajectory of development of poor countries. We looked at the meaning of market failure and why markets fail. Some of the reasons we studied were imperfections in competition, presence of public goods, externalities and imperfections in information. Before discussing market failure, the unit had acquainted you with the two fundamental theorems of welfare economics. After discussing market failure the unit suggested that there may be situations where the government tries to correct market failures but is unable in practice to realise its stated objectives. This type of situation is called government failure. Among the reasons for market failure we found were moral hazard, imperfect information, and the limited control the government had over the bureaucracy and implementing agencies.

The unit then discussed important topics like the impact and influence of institutions on the development process in developing countries. How institutions like property rights and the structure of markets determine were discussed. Issues of good governance were also presented for discussion. The unit then went on to analyse the role of social norms and the community in economic development. We know that markets and the state both have their roles to play, as well as having their respective domains of operations, although the contours of these domains may be debated. But of late, it is being realised that social interaction patterns, social customs and norms and the community do exert their influence on the course of development of developing nations. Finally the unit went on to discuss how widespread coordination failures can take place. It also looked at the puzzle about how suboptimal equilibria emerge and persist, and how the path chosen initially determines subsequent outcomes and how societies can get locked in into inferior outcomes.

14.8 KEY WORDS

Common Property Resources: Resources for which there are no clearly defined property rights; property owned in common by a society.

Institution: The framework of social interactions. According to North, “the humanly devised constraints that structure human interaction. They are made up of formal constraints (such as rules, laws, constitutions), informal constraints (such as norms of behavior, conventions, self-imposed codes of conduct), and their enforcement characteristics.”

Market failure: Situation where a free market is unable to achieve an optimum allocation of resources.

Network Externalities: Network externalities are the effects on a user of a product or service of others using the same or compatible products or services. Positive network externalities exist if the benefits are an increasing function of the number of other users. Negative network externalities exist if the benefits are a decreasing function of the number of other users.

Pareto optimality. The condition which exists when it is impossible to make any individual better off without making any other individual worse off.

Public goods. A good which can only be supplied to all if it is supplied to one and the availability of which is not diminished by any one consumer's use of it.

Rent-seeking. The activities of individuals or firms to obtain special privileges, such as monopoly power, which will enable them to increase their incomes. Using up resources to win such privileges from governments or their agencies.

Tragedy of the Commons: The tragedy of the commons is a metaphor for the public goods problem that it is hard to coordinate and pay for public goods. The term comes from Hardin (1968). The commons is a pasture held by a group. Each individual owns sheep and has the incentive to put more and more sheep on the pasture to gain, privately. The overall effect of many individuals do this overwhelms the carrying capacity of the pasture and the sheep cannot all survive.

Transaction Costs:

The costs of resources utilized for the creation, maintenance, use, and change of institutions and organizations. They include the costs of defining and measuring resources or claims, the costs of utilizing and enforcing the rights specified, and the costs of information, negotiation, and enforcement.

14.9 SOME USEFUL BOOKS

Bardhan, Pranab. (2005). *Scarcity, Conflicts and Cooperation: Essays in the Political and Institutional Economics of Development*. Oxford University Press, New Delhi.

Bardhan, Pranab, and Udry, Christopher (1999) *Development Microeconomics*. Oxford University Press, Oxford.

Basu, Kaushik (1998), *Analytical Development Economics* Oxford University Press, Oxford.

Basu, Kaushik (2000). *Prelude to Political Economy: A Study of the Social and Political Foundations of Economics*. Oxford University Press, Oxford.

Douglass North (1990), *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, Cambridge.

Eirik G. Furubotn and Rudolf Richter (1997), *Institutions and Economic Theory: The Contribution of the New Institutional Economics*, The University of Michigan Press, Ann Arbor.

Elinor Ostrom (1990), *Governing the Commons*, Cambridge University Press, Cambridge.

Oliver E. Williamson (1996). *The Mechanisms of Governance*, Oxford University Press, Oxford.

14.10 ANSWERS /HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) See section 14.2 and answer.
- 2) See section 14.3 and answer.

Check Your Progress 2

- 1) See section 14.4 and answer.
- 2) See section 14.4 and answer.

Check Your Progress 3

- 1) See section 14.5 and answer.
- 2) See section 14.6 and answer.

UNIT 15 MARKET INCOMPLETENESS AND INFORMAL INSTITUTIONS IN THE RURAL ECONOMY

Structure

- 15.0 Objectives
 - 15.1 Introduction
 - 15.2 Market Incompleteness and Imperfections
 - 15.3 Land and Labour Markets in Rural Economies
 - 15.4 Credit Markets in Rural Economies
 - 15.5 Interlinked Transactions and Triadic Interactions
 - 15.6 Informal Institutions and Risk Sharing
 - 15.7 Let Us Sum Up
 - 15.8 Key Words
 - 15.9 Some Useful Books
 - 15.10 Answers / Hints to Check Your Progress Exercises
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15.0 OBJECTIVES

After going through the unit, you will be able to:

- Explain the concepts of market incompleteness and market imperfections;
 - Describe the structure of rural land and labour markets in developing nations;
 - Discuss the implications of risk and uncertainty in rural credit markets;
 - Analyse the working of triadic interactions and interlinked markets; and
 - Describe the risk sharing processes and the working of the informal institutions in rural areas.
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15.1 INTRODUCTION

In this unit, when we speak of rural economies, we have in mind rural economies in developing nations. We discuss in this unit certain common characteristics and features of rural economies that appear to be present in many developing nations. In the course of discussing the characteristics of factor markets in rural areas of developing nations, we extend the theory of markets that you have studied in your microeconomics course. In doing so, the unit provides an illustration that standard tools of microeconomics can be applied to the study of developing nations, including in rural economies. But the unit also suggests that some extensions and modifications in the standard Walrasian general equilibrium that you have studied need to be carried out, indeed have been carried out by researchers studying such societies. These extensions to the Walrasian model have in some cases been made even for equilibrium theory as such in standard microeconomic theory. Among the extensions that we consider are incompleteness and imperfectness in markets, and a unique market arrangement where transactions take place jointly and contracts are drawn up simultaneously, often non-written and informal, for transactions in several markets simultaneously. These are called interlinked transactions.

The unit deals with features of rural land and labour markets. Rural land markets display various types of tenurial systems, like sharecropping and fixed rental systems. These are discussed. The question of technology in use on land, as well as issues of property rights and relations is discussed. In the labour market, various types of

employment relations and contracts are dealt with. The types of unemployment often seen in rural economies of developing nations are discussed.

The unit spends some time in carefully explaining the situation with regard to credit markets in rural societies in developing nations. These markets are plagued with imperfect information structures, the existence of risk both for lenders, in the form of risk of default, as well for the poor in the form of riskiness of situations that will compel them to seek loans. Due to the widespread uncertainty in the credit situation and in events that lead to borrowing, very often informal- lending sources and credit deals spring up. There is also observed in rural areas the emergence of risk sharing arrangements like micro-credit institutions and what are called rotating saving and credit agencies (ROSCAs). All these topics are taken up for discussion in the present unit.

15.2 MARKET INCOMPLETENESS AND IMPERFECTIONS

In your standard microeconomics course, you have read about markets that are perfect –and some that are imperfect. Even when markets were imperfect, they existed so that transactions could take place. However, there are situations where markets are not only imperfect; they may be incomplete or even missing in some cases. There may be coordination failure to such an extent that even when sellers are willing to sell and buyers are present, the required transactions may not take place as the transaction costs and the costs of searching may be too high.

Market imperfectness arises when there are a few sellers in the market and the conditions of perfect competition -- like no seller being able to influence market price, that there is free entry, that information flows are perfect, that the product is homogeneous – are not met. Market incompleteness on the other hand means that in a general equilibrium context, some markets may not exist at all: markets may be missing. This situation sometimes exists in rural markets, particularly markets for credit.

When we consider intertemporal trade, incompleteness of markets often comes into the picture. This is especially true for some financial markets like futures markets., where delivery is to be made in the future, and contingent on some event. If there is uncertainty, and several possible states are considered, the, a commodity in the future can be theoretically considered a distinct commodity for each of the states. Thus if you are to receive an umbrella if it rains, then an umbrella in sunshine can be considered a ‘different’ commodity from an umbrella if it rains. It may be difficult, in the presence of risk and uncertainty, and absence of information, to form transactions for each state-contingent commodity. In this sense there may be incompleteness of markets. If transactions are to be made ahead of the events of delivery of goods in state contingent situations, it may not be possible to specify each such situation. A market that displays incompleteness is insurance markets.

15.3 LAND AND LABOUR MARKETS IN RURAL ECONOMIES

In this section we propose to look at some factor markets in rural areas. Since developing nations are characterised by the presence of a large agricultural sector, land as a factor of production assumes importance. We will consider special agrarian relations like sharecropping and tenancy, and also look at features of rural labour markets.

Land markets, with tenurial rights have been important topics of study for economists. The structure of land rights has been exclusively studied. Among alternative tenurial systems observed have been share tenancy, where the tenant gets a fixed proportion of the produce, and fixed rental system, where the tenant peasant gives a fixed amount as rent to the landlord.

Early writers like Adam Smith and Marshall found share tenancy suboptimal as compared to fixed rental system. The main reason for this was that they thought, in effect, that at equilibrium the marginal product of labour would exceed the cost of labour for the tenant, and hence it would not be worthwhile for the tenant. Marshall also suggested that under share tenancy, the landlord would earn less than what he could earn under fixed rental system or as a capitalist farmer by just hiring in labourers. But in the real world, share tenancy does exist. What can be the possible explanation for the prevalence of share tenancy?

There are some advantages that share tenancy has, particularly in the presence of uncertainty. If there is say uncertainty about the weather, and the crop fails, both landlord and the tenant share in the bad income. Both landlord and tenant thus share risk in share tenancy, unlike in the fixed rental system, where the tenant bears the entire risk. Also, if there is uncertainty in the labour market then too share tenancy is useful.

Another explanation is in terms of incomplete markets for skills. Both the landlord and the tenant have specific skills that are not traded but can be utilised on the land they both share in use, to enhance production, and of course, both have an interest in enhancing production. The landlord has better information about say prices and knowledge about marketing, technology etc. because of greater power. The tenant on the other hand, has intimate knowledge of actual production technique and is 'close to the soil'. These two types of skills are not traded in the market but are utilised to enhance production. This happens because both share in the produce. Another explanation is that the share tenancy system allows

Now let us briefly discuss some elements of rural labour markets. In rural areas of developing nations, unemployment is of a chronic nature, unlike in developed nations when it is episodic. Moreover, unemployment is often disguised whereas in developed nations, it is open. Disguised unemployment means that people apparently are working but there are too many people so that there is surplus labour which means that the marginal product of labour is close to zero. Another feature of rural labour markets is that wages in rural markets are very rigid. Moreover, due to imperfections in the labour market, multiple wages can prevail for the same amount of labour but different types of labourers, for example, one rate for casual labourers and one for permanent workers.

In rural areas of developing nations, as we mentioned there is surplus labour, which means that even if some of the workers were shifted out, total output will not drop..tis is also known as disguised unemployment. Some writers have, however, challenged this on empirical grounds.

Some have distinguished between labour hours and labourers and have suggested that the marginal product of labourers may be zero but the marginal product of labour hours is positive. Some other writers create a further category of labour units and call it the efficiency units of labour, which is a measure of effort. There is a hypothesis which says that output depends on the number of efficiency units of effort. For each worker, the number of efficiency units depends on how hard he is able to work. This in turn depends on his nutritional status. His nutritional status will be determined by his consumption of food, which is determined by the wages he receives. Hence the efficiency wage hypothesis says that firstly total output and productivity depend on the wage rate, and secondly the efficiency unit of each worker depends on his nutritional status.

Check Your Progress 1

- 1) Explain the concept of incompleteness of markets. How does this differ from the concept of market imperfections?

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- 2) Differentiate between share tenancy and fixed rental system. Do you think that share tenancy is less efficient than a fixed rental system?

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- 3) Explain the efficiency wage hypothesis.

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15.4 CREDIT MARKETS IN RURAL ECONOMIES

In the previous section we saw how land and labour markets operate in rural economies in developing societies. This section studies credit markets. Credit markets are important as many activities are spread out over time, like adopting a new technology or investing in crops. Credit markets do not always function smoothly. The main reasons for this is that it is difficult for the lender to monitor the borrower and see whether the loan is being utilised for the purpose it was taken. This creates the problem of ‘involuntary default’ and the lender will find it hard to get his money back. The second problem is that of voluntary default where the borrower has the capacity to repay the loan but is unwilling to do so. Thus the lender faces a risk of default. The problem of voluntary default is intense in situations where the legal system of loan enforcement is weak. This is one reason why there is such high prevalence of informal insurance mechanisms in rural areas.

There are three main sources of demand for credit in rural areas. First, credit is required to be used as capital for new start-ups or expansion of existing production operations. This type of demand is thus for credit for fixed capital. The second source of demand for credit is for credit to be used for ongoing production activities, and is required because there is a lag between outlays required for production, and receipts from sales. This is called credit for working capital. The third source of demand for credit is credit for consumption purposes, by the poor who often borrow because there is a fall in the production of the good they produce, or in its price, or for reasons like illness, or wedding in the family. This sudden, uncertain demand for credit also gives rise to mechanisms of insurance.

Credit is provided by formal institutions like banks as well as informal sources like moneylenders. Formal institutions face the problem that they do not know very well the characteristics of their clientele, and moreover cannot monitor them very well. Sometimes the loan money is used up for purposes other than for which it was taken. The problem is that the borrower has, in effect, limited liability on the loan and this has the consequence that the borrower takes on too much risk. To circumvent this problem, formal institution sometimes ask for a collateral which is reasonable from the institution’s point of view but for the poor peasants it makes formal credit a difficult option. Also, sometimes, the poor peasant is able to offer collateral in a form that may not be acceptable to the formal institution. For example, a poor peasant may have a small piece of land that he is willing to mortgage. Or the peasant offers to provide labour. Because of these problems, informal moneylenders come into the picture. A large farmer who acts as a moneylender may be willing to accept the peasant’s land as mortgage. A big landlord may accept the peasant’s offer of labour as collateral, and use it in case the peasant is unable to repay the loan. Another reason

for the dominance of informal money lending is that the moneylender, being a local person and having personal interaction with the peasant in rural communities, is better informed about the characteristics and activities of the borrower.

Let us now look at some characteristics of rural credit markets. The first point to observe is that rural credit markets rarely display perfect competition. They are characterised rather, by imperfections, both of market structure as well as information. The basic features that rural credit markets display are as follows. First, they have imperfections because of informational constraints. There is lack of information about the use of the loan, as well as about repayment. There may arise moral hazard and adverse selection problems..

The second characteristic is that rural credit markets are often segmented. There is a tendency towards segmentation of rural credit markets. The main reason for this is that much of credit relationships are personalised and take time to build. Often, a moneylender deals with a small group of borrowers to whom he lends on a repeated and regular basis. Most of his borrowers may be from the same village, and he may have close ties with them and be able to monitor their activities. Thus credit markets get fragmented and the lender in each fragment acts as a local monopolist.

The third characteristic is interlinkage in credit transactions. This is related to market segmentation many a time the lender also acts as the employer and merchant. Segmentation takes place along occupational lines and the complementarities with the labour and goods market transaction facilitates credit relationships. We will discuss interlinked transaction in greater detail in the next section.

The fourth characteristic of rural credit markets is that there is a great variation in the rates of interest. This variation can be geographical lines, on the basis of the sources of funds, and may also depend on the characteristic of the borrower. Sometimes it is observed that the rate of interest is extremely high. The presence of such interest rates in rural areas has been explained as stemming from the monopoly position of the lender, as also from the fact that the lender faces a potential risk of default. Sometimes because of interlinkage, the interest rate itself is kept low but the lender obtains other services like labour.

The fifth characteristic of rural credit markets is that there is widespread credit rationing. This means that there is an upper limit to how much credit each borrower can receive. This implies that even at the existing rate of interest, if demand for loans exceeds supply, the interest rate does not rise further to bring demand and supply in balance. Even if the demand is more, the amount of loan obtained is only as much as the lender is willing to supply. This has again to do with risk of default.

The final characteristic of rural credit markets is presence of exclusivity. This means that moneylenders often want their clients to deal only with them and not to approach other lenders for supplementary loans. Exclusivity often combines with segmentation. This creates local monopolies.

Check Your Progress 2

- 1) What are the main sources of demand for credit in rural areas? What problems do formal institutions face as compared to informal ones in lending to rural borrowers?

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- 2) State the main characteristics of rural credit markets.

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15.5 INTERLINKED TRANSACTIONS AND TRIADIC INTERACTIONS

You just got an idea about the working of credit markets in rural areas. One of the interesting features of transactions in rural areas is that interactions and transactions between two parties often take place across several factor markets. The same person may simultaneously be lender, landlord and employer. Thus the other person may simultaneously be borrower, tenant and labourer. What happens here is that contracts are made simultaneously in the land labour and credit markets, and they are joint transactions, with one contract having an impact on other contracts. These transactions are often informal and face-to-face. Social anthropologists had long pointed out the existence of such transactions—Gluckman, for instance, called the societies where such interactions were present multiplex societies-- before development economists started to give analytical accounts.

These interlinked transactions differ from the impersonal and anonymous transactions characterising the usual general equilibrium world of standard microeconomics. They are, as mentioned earlier more in the nature of package deals, with terms of various contracts interdependent. Some writers have seen interlinked transactions as remnants of feudalism, but characterising it in such terms does not help to explain why such transactions exist, and what purpose they may serve. They are more in the nature of what are called ‘customer markets’ in the sense that transactions are more personalised. Occasionally, from a policy perspective, policymakers for the rural sector have often viewed interlinked transactions as putting fetters on the development process, and have sought to do away with these through appropriate policies like land reforms. But we still need to understand their functioning and the reasons why these exist.

Interlinked transactions have been analysed using the tools of information economics like principal-agent theory and other concepts, and efforts have been made to suitably define equilibrium outcomes even if these are constrained Pareto-optimal, or even Pareto sub-optimal. But it is important to keep in mind that these are power relations. To look at why these interaction patterns exist, it is important to know what functions these may be serving. Interlinked relations have several functions.

First, interlinked transactions save transaction costs. Suppose we consider the borrowing needs of a poor farmer. In slack seasons he needs to borrow to smoothen out fluctuations in consumption that would arise due to lower income in such off-season periods. He does not, moreover, have many assets that he can use as collateral. But supposing he was to offer his labour services in exchange for obtaining credit in the slack season. This enables him to smoothen out his consumption stream. So although it may be a barter transaction involving a time lag, it ensures double coincidence of wants. Secondly, interlinking saves on the costs of enforcing contracts. It does it because the labourer knows that if he was to shirk work or be dishonest, it would mean, in the event of it being detected, adversely affect his present and future dealings in, say, the credit market. Similarly, if as a borrower, he was to default on a loan, his position and situation in the labour market would be adversely affected. Moreover, there may be a loss of goodwill for him with other peasants in the small community.

The third type of benefit that interlinking provides is that in the presence of moral hazard with the landlord as principal and the worker as agent, interlinking helps to internalise certain externalities. The landlord can alter the terms and conditions on which he will offer the loan, can make the tenant work harder or undertake activities that are to the landlord's liking. The landlord thus has an incentive, as is sometimes witnessed in rural societies, of making the tenant indebted to him. The final function that interlinking can perform is that it allows the skirting of the problem of missing or incomplete markets, particularly in credit and insurance markets. Consider an assetless tenant who does not have access to an organised credit market. He has no collateral to offer. For him, the tenancy contract can serve as a collateral for credit transactions, because the employer (landlord) is also the lender. Also, in the absence of insurance markets, interlinking can help to mitigate risks. Suppose the contract is that the tenant can borrow in years of bad harvest years and can pay back in years of good harvest. Thus interlinking serves some sort of insurance function.

While interlinking may provide some sort of benefits, it is also important to realise that it bestows even greater power to that party in a transaction that already has greater power than the other party. For example, the power that a landlord has over his poor tenant is increased since the tenant is also a lender so that his power in the credit market adds to his power as landlord. Moreover, rural communities are often isolated and within the rural economy the landlord-employer-lender has a monopoly position with personalised relationship with his tenant-labourer. This allows him to offer the tenant an all-or-nothing choice which again intensifies the power relationship. also, the landlord is able to segment the labour market by 'bundling' credit services along with it.

Let us now discuss a type of contractual arrangement and interaction pattern that is often observed in rural areas. This is the phenomenon of triadic interactions. This basically means that interaction between person X and person Y is influenced by, or is contingent upon person X's dealings with an uninvolved third individual or group Z. In some cases, triadic interactions get combined with interlinked transactions. Notice the difference that triadic interactions usually have with interlinked transactions when the two are not combined. In the case of interlinkage, transactions take place between X and Y, but there are several types of transactions taking place together. In the case of triadic interactions, transaction between X and Y is contingent upon X's transaction with Z. Thus, X's interaction with Y is influenced by the interaction between X and Z. Let us try to make this clear by an example.

Suppose there is a landlord, there is a labourer and there is a merchant. The labourer works only for the landlord. The merchant sells goods to both landlord and labourer. Let the landlord be a monopolist who gives a package (W, L) to the labourer, which means that the labourer is to supply labour equal to L for which he will get a wage W . If the labourer does not work for the landlord he has a reservation utility U^* . If we works for the landlord and accepts the package offered, he gets utility $U^\wedge$. The labourer will work for the landlord if

$U^\wedge > \text{or} = U^*$. Supposing the labourer does not work for the landlord and is satisfied with his reservation wage U^* . He makes do with whatever assets or endowments he has, and uses this to buy things for the merchant. Now, if he were to interact neither with the landlord nor with the merchant his utility would be U^{**} . It is clear that

$U^{**} < U^*$. If the landlord were a monopolist in the absence of triadic relationships, he would have offered a package that would have allowed the labourer a utility no higher than U^* . But in a triadic relationship he can make things worse for the labourer. Supposing he lets it be known that if the labourer refuses to work for him, and if, in spite of this the merchant were to have dealings with the labourer, the landlord would cease forthwith to have any dealings *with the merchant* and will not buy anything from him. Now, if the labourer were actually to refuse to work for the landlord, it is the merchant who faces a difficult choice. If he were to continue to trade with the labourer, the landlord would sever all ties with him. If on the other hand, he were to trade with the landlord, he would have to forsake his ties with the labourer because otherwise the landlord would be annoyed. So his choice is, in the

event that the labourer was to refuse to accept the landlord's package, either to trade with the landlord alone, or with the labourer alone. It is reasonable to expect that the merchant would choose to trade with the landlord alone. Now the labourer has not accepted the landlord's package, and moreover, the merchant is not dealing with him. So he ends up at the utility level U^{**} which is less than the utility he would have had he accepted the landlord's package which is U^* . So as long as the landlord offers the labourer a package whose utility level is $> U^{**}$ the labourer will be compelled to accept it, otherwise he senses that even the merchant will stop dealing with him. But now the landlord can guess what the labourer must be thinking and will offer him a package that yields the labourer a utility level *no higher than* U^{**} . Thus the landlord, in the presence of triadic relationship, can push the labourer to a lower utility level than he could have were he a monopolist and there was no triadic relation.

You just saw an example of triadic relationship. Now extend this concept to the level of a whole village. There may be powerful groups that are able to keep certain individuals or groups from rebelling against a coercive set-up by declaring that they will stop all dealings with anyone who has dealings with the rebel(s). This keeps the existing situation intact and often prevents changes taking place, changes that would have undermined a coercive or exploitative institution, for instance rigid caste system in Indian villages. You read in the previous unit about how inferior equilibrium outcomes sometimes get historically locked-in. Triadic relationships like these are another way how inferior or non-optimal outcomes can persist.

16.6 INFORMAL INSTITUTIONS AND RISK SHARING

We have seen that credit markets in rural areas are characterised by the presence of uncertainty and risk of default. Moreover the poor of the rural areas have to cope with various kinds of risks in their lives. What are the basic types of risks that the poor face? First, the rural societies and especially the rural poor face a high incidence of diseases and environmental hazard. Another kind of risk is business risk, or risk associated with the fact that many poor in rural areas are engaged in some kind of non-labour transaction. For instance, many are self-employed farmers. Some may be artisans. In fact, often the technique of production used in rural areas is rudimentary, with the result that these offer little protection against natural events. Coupled with this kind of risk is the risk of natural disasters or calamities. Since rural economies are vulnerable to risks technology shocks lead to a situation where contractual compliance is low.

There are some other types of risks that are present in rural societies stemming from the fact that rural societies are relatively isolated. Rural product and factor markets like labour and assets are poorly integrated spatially. This implies that a geographical pooling of market risk is not perfect.

How do the poor cope with the risks they face? Basically, there are three types of risk coping strategies that the poor adopted. The first types of strategies are those that are adopted prior to the event occurring. These strategies are adopted before the shock occurs to reduce the exposure to risk. The second types of strategies are those adopted to create some kind of buffer stock by accumulating assets. The third type of strategy adopted by the poor to cope with risk is to share the risk with each other.

The first type of strategy involves strategies to change production choices. Income smoothing is one such strategy. One basic production-altering strategy is to shift their residing place. This is adopted too lower the risk from diseases. To mitigate the risk from potential economic shocks, the poor adopt several strategies. They can specialise in type of agricultural products like specific types of crops that are less prone to pest and environmental risk factors. Another way is to diversifying their income generating activities. These can take several shapes. Farmers can plant different types of crops or even several varieties of the same crop. Similarly diversification can be gone in for in livestock and herding activities. Another form of diversification can be to combine non-farm activities with farm activities. Of course,

diversification can take place for reasons other than to mitigate risk. An important risk situation facing the rural poor is the question of food security. One way to cope with this type of risk is to strive for self-sufficiency in the production of food by households. When markets are absent, or are imperfect leading to fluctuations and volatility in food prices, self-sufficiency is a natural course. Another strategy is flexibility in operations. For instance, in arid and semi-arid regions, rainfall may be erratic, and replanting seeds more than once during the season is an option. The desire to keep production flexible may also explain why in some cases artisans continue to use non-sophisticated equipment.

The second type of strategy that the rural poor adopt to cope with risk is to accumulate assets in normal times and then attempt to run down the assets or liquidate these in times of economic shock. For example there may be distress selling of land. But many a time such liquidating of assets does not solve the problem, as it affects future earning capacity. Thus if a poor family sells off its land, the prospective yield from land will be lost. There are other related strategies. One is that of precautionary saving. Households can try to save in advance in anticipation of future risky events. Households can try to build up reserves of liquid assets that can be sold off or consumed in times of need. These assets may even be food stock or jewellery. Other ways to cope with risk include looking for wage employment. Sometimes in times of adverse conditions, some poor even migrate outside their villages to seek employment. Sometimes the poor end up becoming bonded labourers because of seeking jobs in distress conditions. The poor are often forced to sometimes lower even their existing levels of consumption. They also have to resort to borrowing to cope with risk. This implies that their asset holdings actually become negative.

There is an important method by which the poor attempt to cope with risk, and that is to share the risk with others in the community. Risk sharing strategies implies group effort. This raises questions of cooperation and collective decision-making. Rural societies have strong ties of family and kinship. There are other solidarity mechanisms as well. These solidarity mechanisms may be based upon a gift exchange relationship or delayed reciprocity relationship which depends on need and affordability. Sometimes risk sharing is implicit when villagers exchange among themselves non-consumable assets like livestock for consumable commodities like grain. Thus, if such markets are present, exchange of commodities can sometimes be seen as implicit risk sharing.

Rural areas have developed some non-market solutions and arrangement for mitigating the risk effect that is pervasive. These may be credit cooperatives, informal credit and insurance arrangements, and rotating savings and credit associations. The common characteristic of all these arrangements is that they do not use formal contractual arrangements that can be enforced through the formal codified legal system. Dealings are based more on personal relations. Informal credit mechanisms arise because informal credit itself can serve as an insurance mechanism against risk when risk-sharing mechanisms are absent. Moreover, often credit and insurance characteristics get combined in these deals. Another arrangement may be inter-linkages in agricultural contracts that we have already discussed. In this section we propose to discuss some informal mechanisms, particularly rotating saving and credit associations.

Protection against risk of, say, a fluctuating income, if it is to be done by an individual, is done through saving or diversifying the sources of income. When it is done by a group, there is some kind of scale effect or synergy where the group can potentially achieve for each member what the individual members may not have been able to achieve individually.

One of the basic institutional innovations seen in rural areas is what is called rotating saving and credit institutions (ROSCAs). Basically the way these function is to have a group of members of the association. They put in some saving periodically. When the need arises members get loans. One variant of it you may be familiar with: these are called chit funds.

Usually in many ROSCAs, an external formal institution lends to the group. The borrowers are asked to form a group. The members thus self-select into groups. The ROSCA is given a loan which is in turn given to its members. The ROSCA then acts as a joint liability lending institution. ROSCAs are also called micro-credit institutions. The basic characteristics of ROSCAs are that, firstly, they are joint liability lending institutes. Secondly, and following from the first point, these are associations where members can exert peer pressure, because the whole group is held liable if any member defaults on a loan. Thirdly, because the members know each other well and there is joint liability, the external agency itself can closely monitor the loans it has provided to the group. Finally, the external agency often deals with these by relying on promises of repeated loans to borrowers who perform well.

Many ROSCAs have been great success, like the Grameen Bank of Bangladesh, which was developed by Muhammad Yunus. In this institution, members with separate projects get together and apply jointly for a loan as a group. Initially the loan is given to two members, who start their activity with the loan. If they successfully meet the repayment schedule, two more members are given loans, and so on. There have been variants on this. By 2000, the Grameen Bank experiment had spread to about 26, 000 villages and involved 20 million people. Yunus has been nominated for a Nobel Prize in Economics.

What are the reasons for the success of several ROSCAs? One immediate reason is the small scale of operation. Moreover, the members know each other. This has three implications. First, as already mentioned, the members can put peer pressure on each other. Secondly, there is considerable lowering of transaction costs. Thirdly, because members know each other, and have established social networks, they can use the stock of social capital. The advantage joint liability lending institutions have is that they can successfully tackle some problems that the formal lending institutions find hard to solve.

First, the micro-credit institutions find it much easier than formal lending institutions to ascertain the likelihood that the borrower will default on the loan. All lending agencies face a risk of default. They cannot determine beforehand how likely a potential borrower is to default. There is the problem of asymmetry of information as the borrowers know more about themselves than the lender does about them. Micro-credit institutions, because of close personal interaction among the borrowers, can much more easily ascertain what kind of risk a potential borrower is. These institutions can lower the asymmetric information problem.

Another problem that bests formal lending institutions is that these institutions find it hard to make sure that the borrower is using the loan properly and for the purpose for which it was intended, so that the borrower is in a position to repay the loan. There is the problem of moral hazard where it is difficult for the formal lending institution to monitor the actions of the borrowers. ROSCAs, because of their nature, are better able to tackle this problem of moral hazard and to make sure that the loans are used for their correct purpose.

A third problem that a formal institution like a bank may face is that in case the borrower says that he is unable to repay the loan, the bank is going to find it difficult to verify the performance of the borrower's project. Micro-credit institutions will find it much easier to learn how the borrower's project actually did.

Lastly, if a borrower is reluctant to repay the loan, a micro-credit institution is likely to be much more successful than a formal lending organisation in forcing the borrower to repay. Thus micro-credit institutions are better at enforcement of repayment. The main reasons for this are that members of a community are more likely to know about each other than formal institutions that are outside the community are likely to know about them. Secondly, unlike peers in the community, a bank cannot readily apply financial sanctions against poor people who default on loans.

Check Your Progress 3

- 1) What functions do interlinked transactions perform and what are their benefits?

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- 2) What are the risk-coping strategies of the rural poor? Briefly describe how an informal rotating saving and credit association works.

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15.7 LET US SUM UP

In this unit, we have taken a detailed look at the rural economy. One of the characteristics of the rural economy is the pervasiveness of uncertainty and risk. This necessitates carefully considering incompleteness of markets. The unit thus began with a discussion of incomplete and imperfect markets. The unit then moved on to a discussion of land markets and labour markets in rural economies of developing nations. The structure of labour markets was discussed along with the incentive problem and how it is resolved. In the land markets, contractual forms and incentive issues were discussed. The relative merits of different contractual relationships, like share-cropping versus fixed rental system were considered.

The unit then took up a discussion of credit markets in rural economies. It was seen that such credit markets may not function smoothly since there would be difficulty in monitor the use to which loans were put; moreover, there is a risk of default. Default may be involuntary or voluntary. We looked at the basic characteristics of rural credit markets like segmentation and the presence of credit rationing. Informal credit markets were also considered.

Following this a special feature of rural economies was considered, namely, the presence of interlinked transactions. Often the employer is also the money-lender and may also be the landlord. These interlinkages in transactions call for special modes of analysis which were considered. Another phenomenon observed in rural economies is that of triadic relationships where a transaction between x and y is influenced by the interaction between x and z. these kinds of triadic interactions were considered. The unit finally took up for discussion the topic of how the rural people cope with risk and uncertainty that is pervasive in their lives. Set ups that have been devised to share the risks were discussed as also risk sharing saving and credit associations.

15.8 KEY WORDS

Collateral: Some asset or commodity the borrower pledges to the lender or leaves with him and against which loan is obtained.

Common Property Resources: Resources for which there are no clearly defined property rights; property owned in common by a community or society.

Complete Markets: A complete market is one in which the complete set of possible gambles on future states-of-the-world can be constructed with existing assets. This is a theoretical ideal against which is rarely found in the real world, like perfect

competition. Another way to define complete markets is to say that a market is complete if it is possible to insure against future uncertain states of the world.

Disguised Unemployment: Situation where labourers are employed but their marginal product may be close to zero. It is also known as surplus labour.

Interlinked relations: relations among two transactors where transactions are simultaneously carried out in a number of markets. Each transaction is contingent on the other. Thus the same person may be moneylender, employer, and merchant, while the other person may simultaneously be labourer, borrower and buyer.

Sharecropping: a tenancy condition where the tenant receives a proportion of the output produced.

Triadic relations: A relation pattern where the interaction between two people is contingent upon the interaction of them with an uninvolved third party.

15.9 SOME USEFUL BOOKS

Bardhan, Pranab. (2005). *Scarcity, Conflicts and Cooperation: Essays in the Political and Institutional Economics of Development*. Oxford University Press, New Delhi.

Bardhan, Pranab, and Udry, Christopher (1999) *Development Microeconomics*. Oxford University Press, Oxford.

Basu, Kaushik (1998). *Analytical Development Economics*. Oxford University Press, New Delhi.

15.10 ANSWERS/HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) See section 15.2 and answer.
- 2) See section 15.3 and answer.
- 3) See section 15.3 and answer.

Check Your Progress 2

- 1) See section 15.4 and answer.
- 2) See section 15.4 and answer.

Check Your Progress 3

- 1) See section 15.5 and answer.
- 2) See section 15.6 and answer.